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AUG 6 1948

STERLING AND KINGSCROST
**Seed Corn
Bulletin**



**Northrup, King & Co.'s Kingscroft
Hybrid Seed Corn is Sold Only
Through Dealers . . . and is Packed
in 56 lb. Sealed Bags, like this:**



The following varieties of Kingscroft Hybrid Seed Corn are now available. Descriptions may be found on pages 8 and 9 of this bulletin.

**KINGSCROFT MINNESOTA No. 13
KINGSCROFT EARLY MINNESOTA No. 13
KINGSCROFT EXTRA EARLY MINNESOTA No. 13
KINGSCROFT REID'S (Early)
KINGSCROFT REID'S (Medium)
KINGSCROFT REID'S ENSILAGE**

Dependable Seed Corn

Dependable seed corn must meet three important qualifications: Germination, Maturity and High Yielding Inheritance.

Germination

A high percentage of sprouts in an artificial test is not enough. Conditions in an artificial test are all favorable, but soil conditions at planting time are often extremely unfavorable.

A high degree of germinating vigor is necessary to overcome unfavorable planting conditions. This vigor is inherent in all seed at ripening or before. To preserve vigor, moisture must be removed before frost can damage the germ or respiration can weaken it.

A germ is a living organism which, in a sense, breathes. It takes in oxygen and gives off carbon dioxide. When moisture is high, this respiration is rapid and reduces the germ strength. When moisture is removed early in the Fall, vigor is preserved by reducing the germ to a dormant state.

That is why good seed corn, under unfavorable planting conditions, will produce a full stand of vigorous plants, when other seed of equal artificial test fails to make a stand.

Maturity

Dependable seed corn should mature in the average season in the area in which it is to be planted. A thorough understanding of requirements of each area based on long experience is necessary.

Variety names are not safe guides of earliness of maturity. For instance, the Minnesota Experiment Station planted 5 strains of Minn. No. 13 in a comparison plot. The earliest matured 3 weeks earlier than the latest, yet all five strains were originally from the same source.

Location where the seed corn was grown also is not a safe earliness guide. Many farms have fields where corn will mature a week or more earlier than other fields on the same farm. In favorable seasons Iowa corn has been matured in North Dakota and Illinois corn in Central Minnesota.

Yield

Most corn belt Experiment Stations have shown that some strains of the same variety consistently outyield other strains.

Only by continual comparisons of yielding ability of various strains of the same variety can one be sure of high yielding ability.

Proper methods of seed selection are essential to maintain high yielding ability of any strain.

Kingscrost Hybrid Seed Corn

Kingscrost is the brand name which distinguishes our Hybrid Seed Corn. It is registered in the U. S. Patent office and can be used only by Northrup, King & Co. as a brand for hybrid seed corn.

Hybrid seed corn is a first generation cross between inbred strains. Inbred Strains are developed by continual inbreeding of selected plants for several generations. By inbreeding is meant fertilizing the silk with pollen from the same plant.

The development of inbred strains and finding superior crossing combinations between them, requires over 10 years. The beginning is made with a very large number of selected plants because so many develop glaring abnormalities or weaknesses after a few years of inbreeding that they must be discarded.

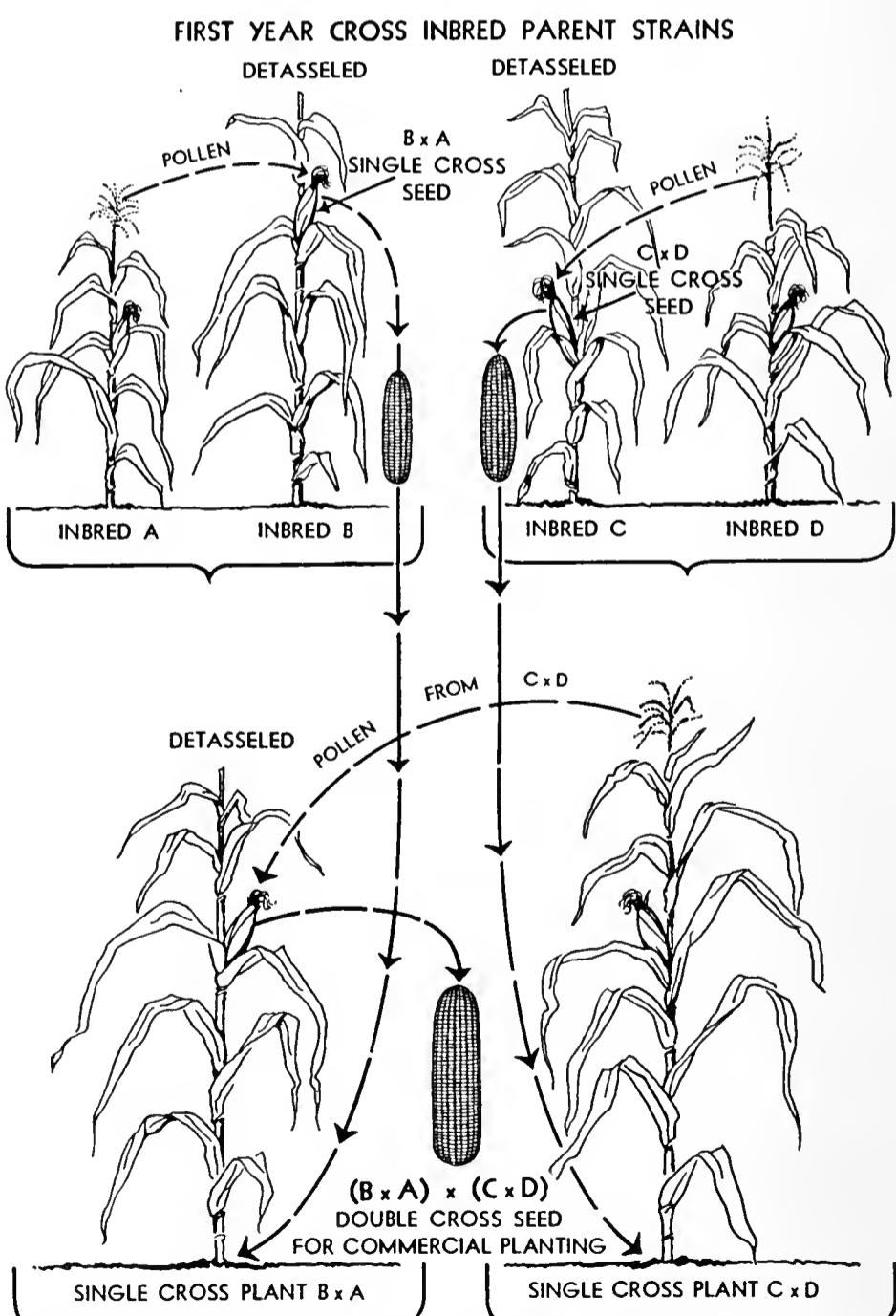
After 5 or 6 years of inbreeding, a relatively few inbred strains are left after a large number of plants have been discarded. Those considered satisfactory at that stage are very uniform in all characters, but each one is quite different from all the others.

After inbred strains are developed, the next step is to discover which inbreds, when they are crossed together, will produce higher yields than the corn from which they were derived. This requires making a very large number of crosses and comparing them for yield with the ordinary varieties. Only a few such crosses are superior.

With this information, double and three way crosses are tried.

A double cross is between two single crosses involving 4 inbreds. A 3 way cross is between an inbred and a single cross involving three inbreds. A single cross is between 2 inbreds.

After a superior double or three way cross is discovered, commercial production of hybrid seed corn is possible. Most commercial hybrids are double crosses which require four years to grow.



Method of crossing inbred plants and the resulting single crosses to produce double cross hybrid plants

First year, the four inbred strains are increased in nursery rows of 15 to 30 plants by hand pollination with the silks and tassels all covered with bags.

Second year, these inbreds are increased in larger volume, usually 1 or 2,000, also by hand pollination.

Third year, two single crosses are produced by crossing strain 1 with strain 2, and strain 3 with strain 4 in plots well isolated from other corn.

The two strains which are to be crossed are planted in alternate rows. All tassels are pulled out of one strain before any pollen ripens. The only pollen in the plot is from the other strain which fertilizes the detasseled strain and, therefore, the single crossed seed is produced on the strain which was detasseled.

Fourth year, the two single crosses are planted in large production fields in alternate rows. Usually one row of one single cross to three rows of the other. The triple rows are detasseled and the tassels on the single rows remain to produce pollen to fertilize the detasseled rows.

Therefore, seed produced on the detasseled rows is double crossed, seed being grown on one single cross and fertilized by another single cross.

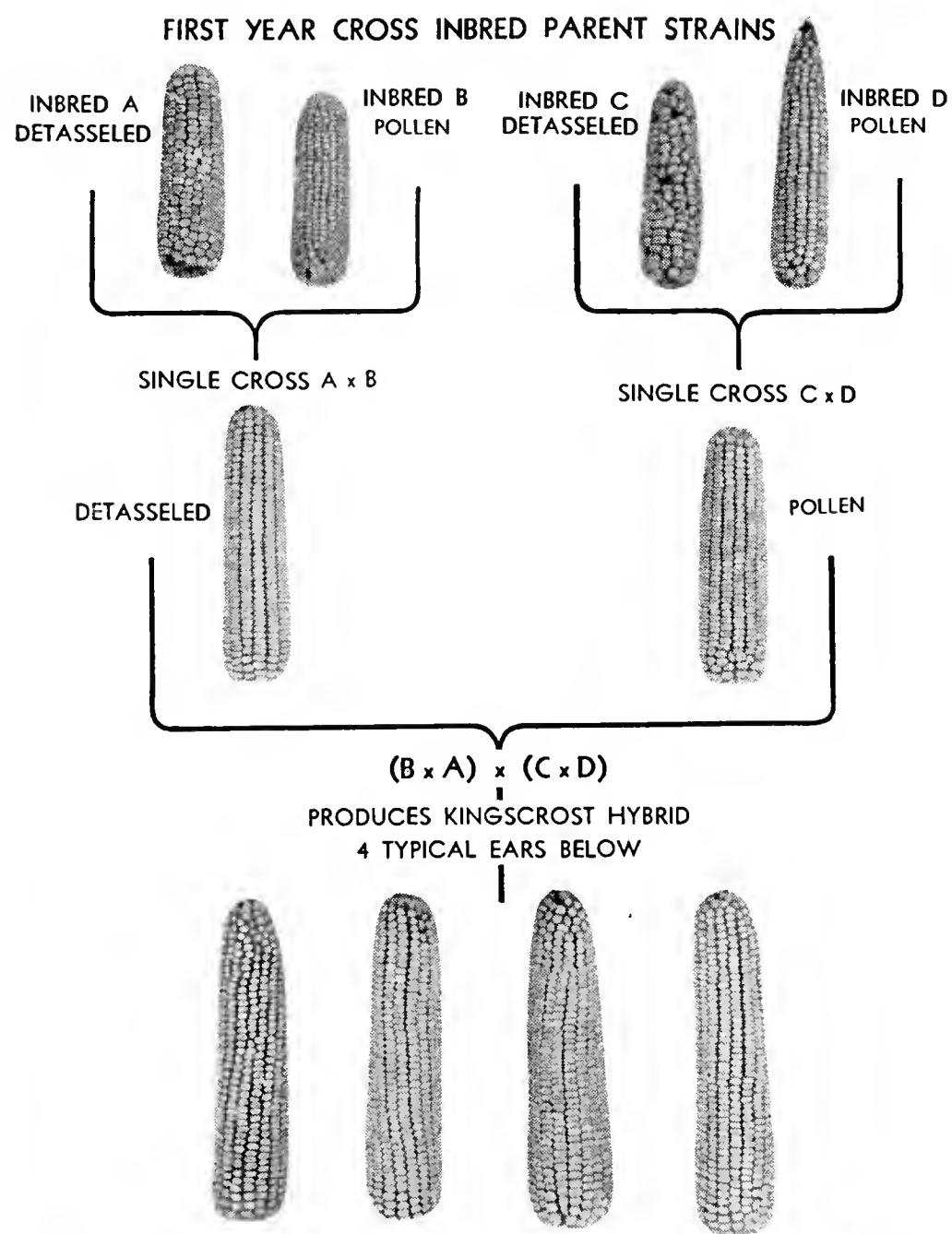
It is evident from this that hybrid seed corn is very expensive to breed to start with. Production of hybrid seed also is far more expensive than seed of the regular varieties.

Moreover, unless each step in hybrid seed production is very carefully

handled, the productive ability of the hybrid seed is materially reduced. For instance, in the production of the double crossed seed, if any pollen on the rows supposed to be detasseled is allowed to ripen and fertilizes some of the detasseled plants, seed from such plants is not double crossed but an increase or second generation of the single cross. Such seed yields very low and produces runty plants in place of the vigorous, high yielding plants which the double crossed seed should produce.

A considerable amount of experience is essential to avoid mistakes which reduce the yielding ability of the hybrid.

A good hybrid can be ruined by inexperienced producers.



Ear chart showing method of breeding hybrid seed corn—and the relative appearance of inbreds, single cross and double cross ears

Why Plant Hybrid Seed Corn?

Mainly because of higher yields. In the Iowa corn yield contest where a large number of hybrids are compared for yield with the best regular varieties average yield of the hybrids over a 10 year period was 10% higher than with the regular varieties. The best hybrid for 6 years averaged 17.3% higher yield than the regular varieties.

Our own average in comparisons, both on farms and regular yield plots is from 7 to 11 bushels per acre higher than the regular varieties. It is mainly this difference in yield which caused the demand for hybrids to exceed the supply from 1933 to 1936.

Hybrids possess other advantages almost too numerous to mention. An important one is their greater resistance to lodging, which makes husking easier and reduces damage from ears getting on the ground.

Greater resistance to drought from 1931 to 1936 very often resulted in hybrids yielding twice as much corn as the regular varieties.

Some hybrids have considerably higher shelling percentages than regular varieties. One report is that a farmer had 108 bushels on ear which shelled 115 bushels.

Good hybrid seed corn usually germinates quicker and stronger than regular varieties cured in the same way. This often results in a satisfactory stand of hybrid under unfavorable planting conditions where varieties failed to make a stand.



In this illustration the hybrids are the dark vigorous rows—the open pollinated variety rows are light colored and show a poor stand. This field had very unfavorable growing conditions but Kingscrost made a fair crop.

Hybrid Corn Increasing in Popularity



Rows of Kingscrost Hybrid Corn still standing erect after storms and snow. Note also that ears are attached and borne high on stalks.

Hybrids usually show a higher market grade than regular varieties. Practically all open pollinated varieties produce some late maturing ears often resulting in damaged grain. Hybrid ears all mature more at the same time.

Several instances have been observed where hybrids have withstood frost when regular varieties alongside have been killed.

Hybrids appear to be the corn of the future. Conservative predictions have been made that a high percentage of the total corn acreage in the corn belt will be planted to hybrids when sufficient hybrid seed is available.



A production field of Kingscrost Hybrid Seed Corn. In between the rows with tassels are two or three rows which were detasseled before pollen was ripe. It is from these plants that the crop of Kingscrost seed is obtained.

Why Plant Kingscrost Hybrid Corn?

There are good hybrids and poor hybrids now and probably always will be. Probably there will be seed corn sold as hybrids which are not hybrids at all. Good, hybrid producing strains will be planted by inexperienced or careless growers and because of poor detasseling the seed will not produce higher yields than open pollinated varieties.

Every farmer is going to have to select what he considers to be the most dependable source of hybrid seed because growing one's own supply of hybrid seed in a small way will hardly be economical. In choosing this source, he will consider reputation of the producing organization over a long period of years. He will consider its personnel, their training and experience, and equipment for drying, testing and handling.

Northrup, King & Co.'s reputation over 50 years is well known. Being one of the first to commence developing and producing hybrids and with a large market established for its products, an experienced and well trained personnel has been built up.

Equipment costing over a quarter of a million dollars, and drying methods which are the outgrowth of 50 years of experience are behind Kingscrost Hybrid Seed Corn.

Our organization of dealers, some of whom you probably know personally, place Kingscrost Hybrid Corn in your immediate neighborhood with a minimum of distribution expense. We sincerely believe that results from Kingscrost Hybrid Corn will merit its use by more farmers in our trade territory than of any other hybrid corn.



A field of Kingscrost Reid's 13 in southern Minnesota. Plants erect and ears carried well up the stalks.

NORTHRUP, KING & CO'S KINGSCROST HYBRID SEED CORN

Northrup, King & Co. was one of the first of the seedsmen to begin developing hybrids through inbreeding.

In 1922 we started by inbreeding 1,000 selected plants of Minn. No. 13. Each year since then from 50,000 to 100,000 inbred plants have been grown in the development of our inbred strains.

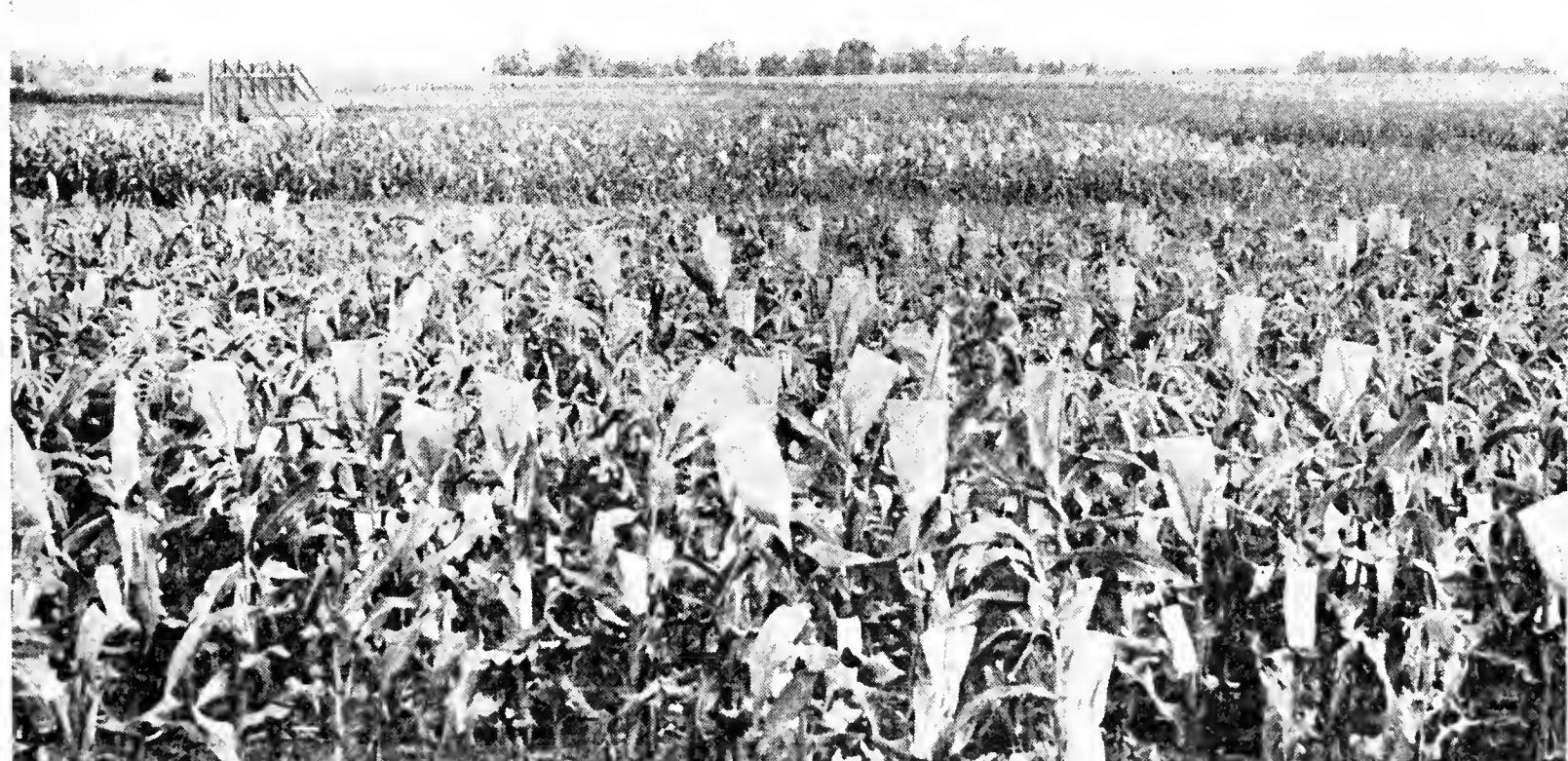
Starting in 1928, experimental crosses were made and tested for yield. Approximately 1,000 to 2,000 yield comparisons have been made each year since.

In 1931, small quantities of our first double crosses were grown for seed. These were widely distributed for trial with farmers.

By 1933, hybrid seed corn production had become a factor and now several thousands of acres of hybrid seed corn are being produced to sell under the Kingscrost Brand.



One of the trial grounds of Kingscrost and Sterling Seed Corn operated in eastern Wisconsin. Here farmers could check on the relative merits of each strain.



Inbreeding plot showing method of "bagging" the tassels so hand pollination can be done effectively.

Strains of Kingscrost Hybrid Corn

ALL YELLOW DENTS

Kingscrost Reid's	105-115 days
Kingscrost Reid's, Ensilage Strain	105 days
Kingscrost Minn. No. 13	100 days
Kingscrost Early Minn. No. 13	95 days
Kingscrost Extra Early Minn. No. 13	90 days

Based on our Sterling strain of Standard Minn. No. 13 and Golden King being considered 100 day corn.

KINGSCROST REID'S (EARLY)

105-110 Day

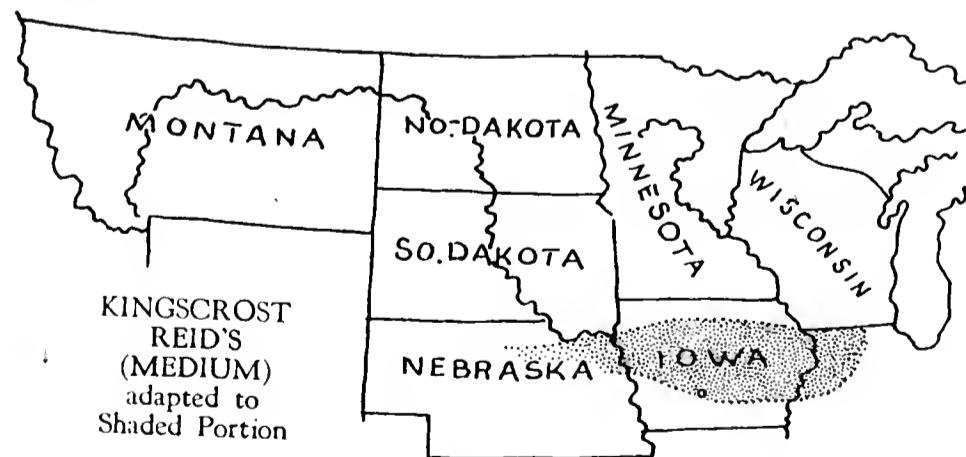
Adapted to Southern Minnesota, Wisconsin, Northern Iowa and Illinois. $\frac{1}{2}$ to 1 foot taller than Minn. No. 13 and Golden King, from 5 to 10 days later maturing. Ears quite large with good kernel depth. Classed as an early corn south of the northern two tiers of counties in Iowa.



KINGSCROST REID'S (MEDIUM)

115 Day

Adapted to North Central Iowa as far south as Cedar Rapids. Somewhat earlier than Iowa Hybrids Nos. 939 and 942 and some larger in plant and ear growth than our Early.



KINGSCROST REID'S ENSILAGE STRAIN

105 Day

Adapted for Ensilage wherever Golden Glow and Minn. No. 13 are grown. $\frac{1}{2}$ to 1 foot taller than Golden Glow with heavy suckers. Averaged in yield comparisons covering 2 years in eastern Wisconsin, 5 ton per acre more ensilage than Golden Glow with the same earliness of maturity.

Strains of Kingscrost Hybrid Corn

KINGSCROST MINN. NO. 13

100 Day

Adapted wherever Standard Minn. No. 13 or Golden King is grown. Plants about $\frac{1}{2}$ foot taller with maturity the same. It has averaged about 2 ton more ensilage per acre than Minn. No. 13 and Golden Glow in yield comparison.



KINGSCROST EARLY MINN. NO. 13

95 Day

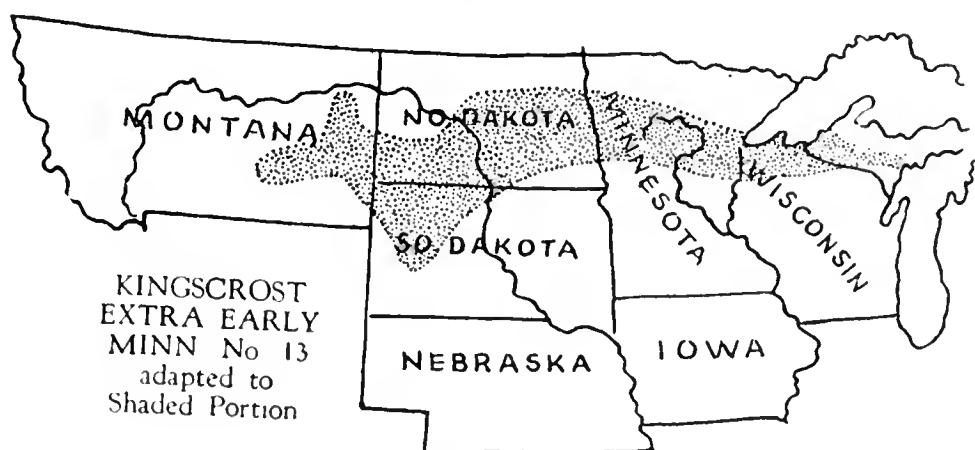
Adapted to North Central Minnesota and similar areas for husking. Not recommended as an ensilage corn except in extreme northern areas. Maturity between Standard Minn. No. 13 and Haney Strain of Minn. No. 13. Plant almost equal in size to Standard Minn. No. 13 and taller than Haney.



KINGSCROST EXTRA EARLY MINN. NO. 13

90 Day

Adapted where Haney Strain of Minn. No. 13 is grown but seems to show better maturity farther north than Haney. Plant about $\frac{1}{2}$ foot taller than Haney. Recommended mainly as a husking corn and for ensilage only in the extreme northern areas.



Maturity of Hybrids

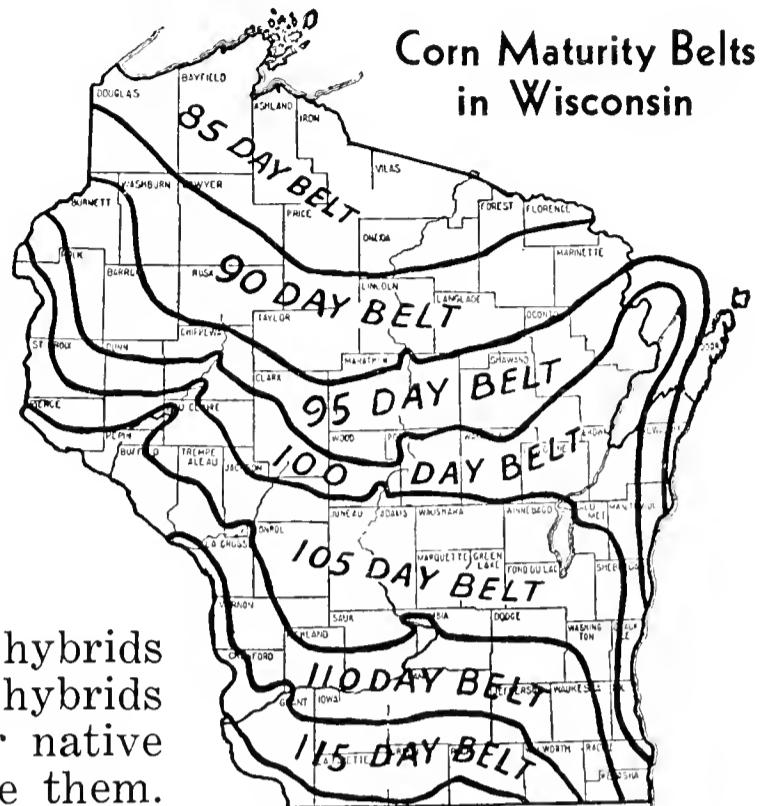
No matter how good a hybrid is it must be of proper earliness to be best for any particular farm. The best basis for selecting a hybrid of proper earliness is to compare its earliness with regular varieties which have been grown in the area in question over a long period of time.

From 1930 to 1936, every season has been much warmer than average. In such seasons it is possible to mature a later corn than in seasons with average heat.

Since most farmers have first grown hybrids during these years, many have selected hybrids considerably later maturing than their native varieties but have been able to mature them. Later maturing hybrids, of course, have a yield advantage over earlier ones.

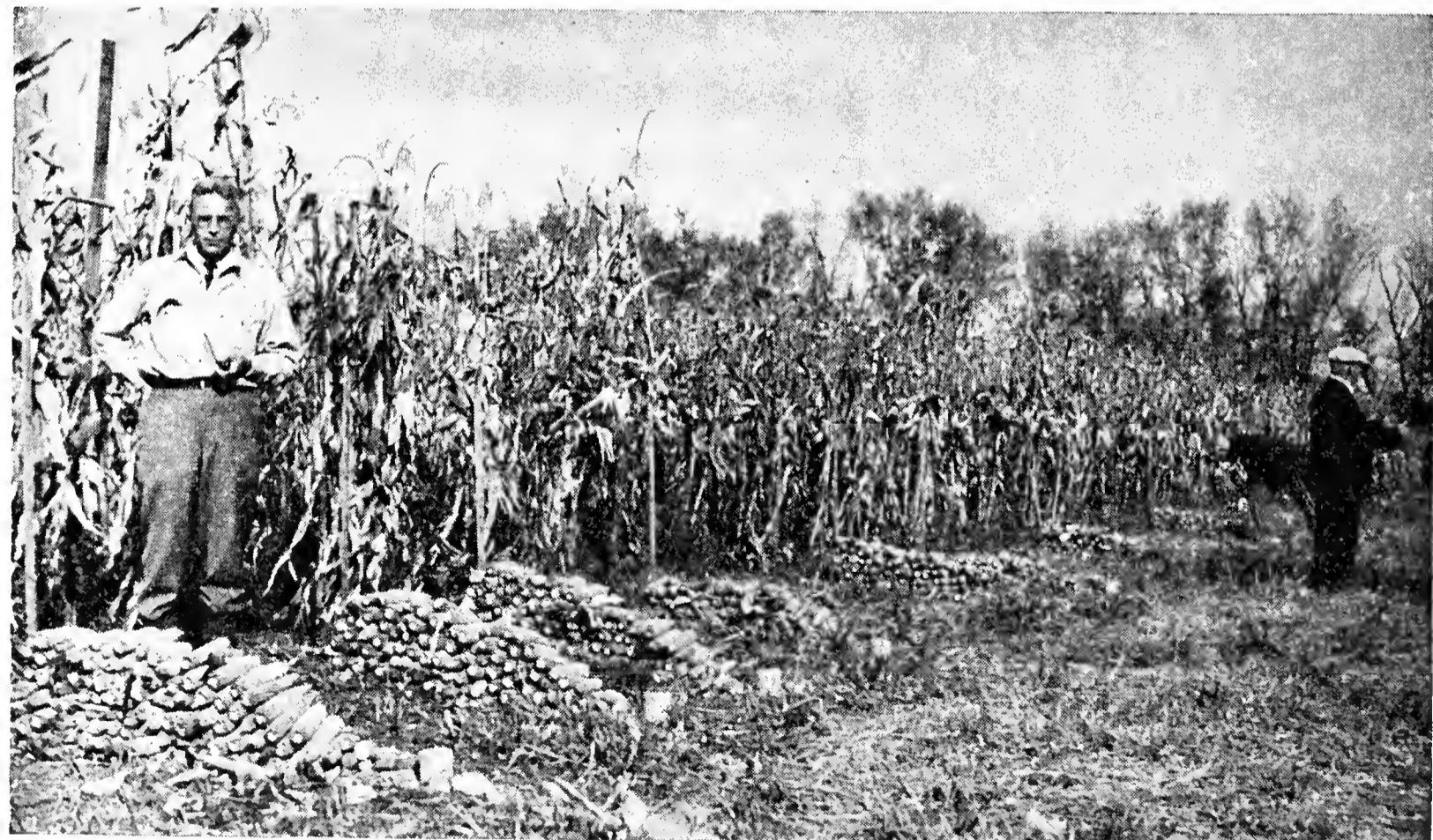
In order to give a proper perspective, the chart on page 11 is presented. It shows amount of heat during the 5 corn growing months each year from 1820 to 1936—116 years. The average heat units for 116 years is 76. The average for the 7 years, 1930 to 1936, is 94 or 24% over normal. The years 1925-1926, 1928-1929, are near average seasons.

To show how these hot and cold seasons affect time when the corn crop ripens, on page 12 is a table showing when Standard Minn. No. 13,



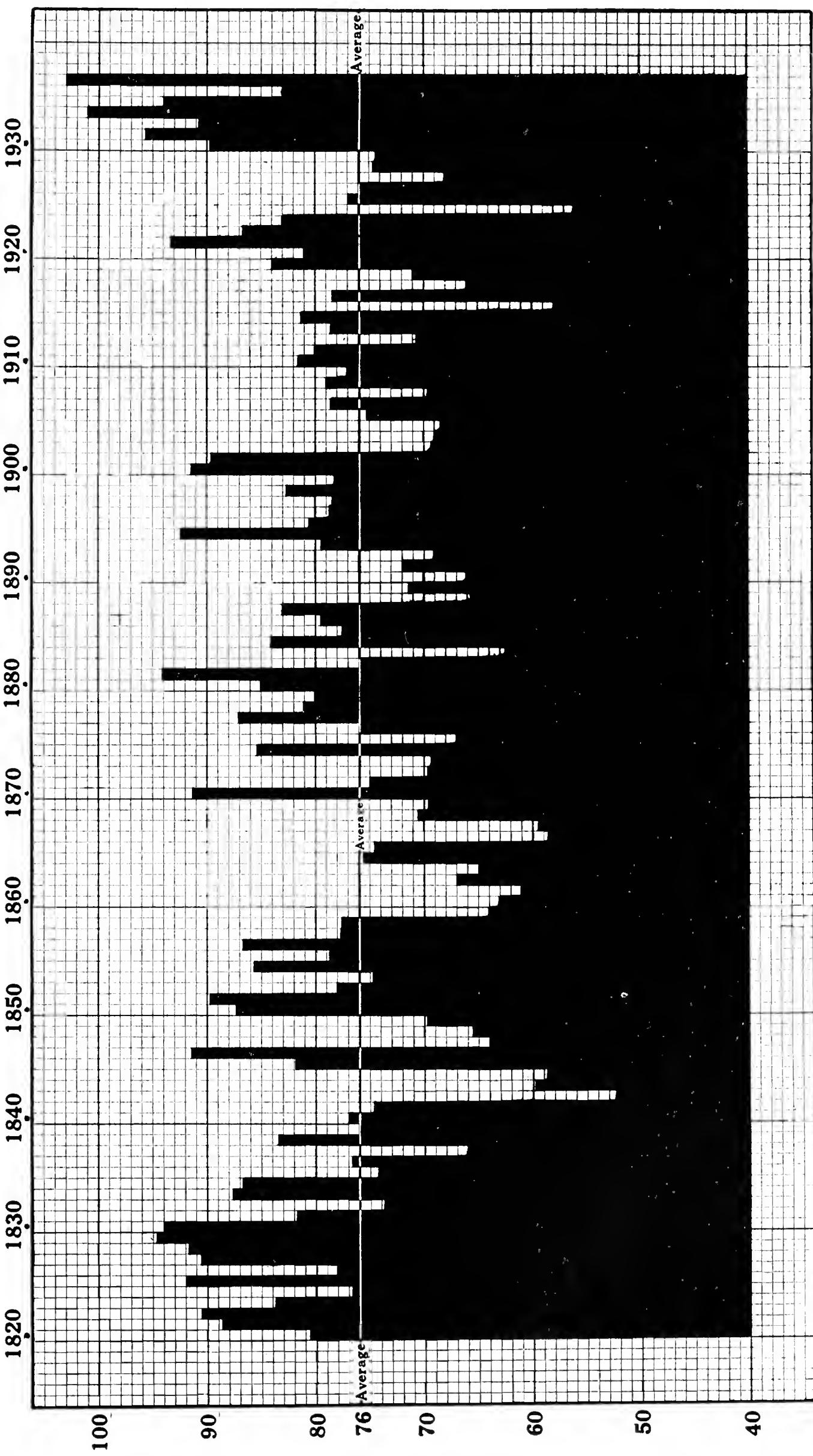
Strains of hybrids have been developed to meet the needs of the several maturity belts in the state.

From Wisconsin Circular 282.



A Farm Yield Hybrid Comparison Plot in Northern Iowa.

COMPARATIVE HEAT UNITS
For The Five Summer Months At Minneapolis, 1820 to 1936

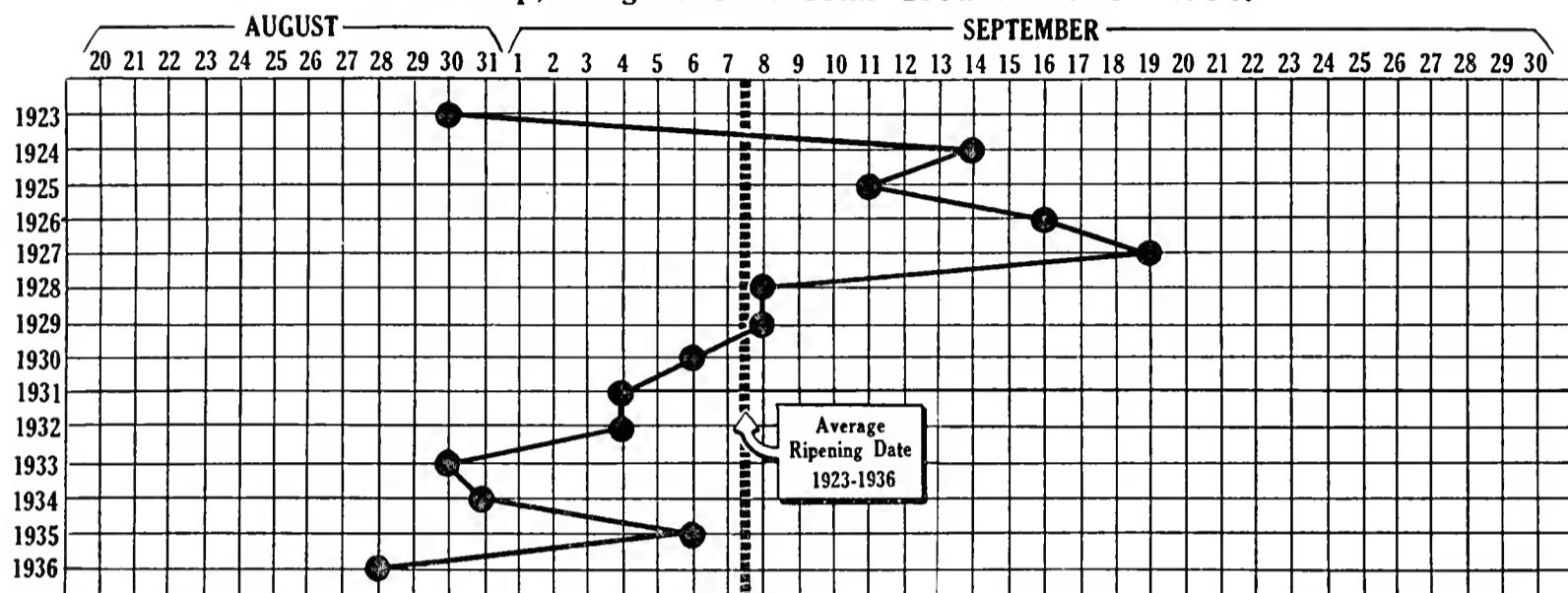


ripened in our trial grounds from 1923 to 1936, planted practically the same time each year on the same farm. Notice how the same corn matured 3 weeks earlier in the warmest season than in the coldest season.

If you have been growing a hybrid maturing later than native acclimated varieties, do you think you could mature it in a season when maturity might be 3 weeks later?

Ripening Dates Of Standard Minnesota No. 13

In Northrup, King & Co.'s Trial Grounds 1923 - 1936.



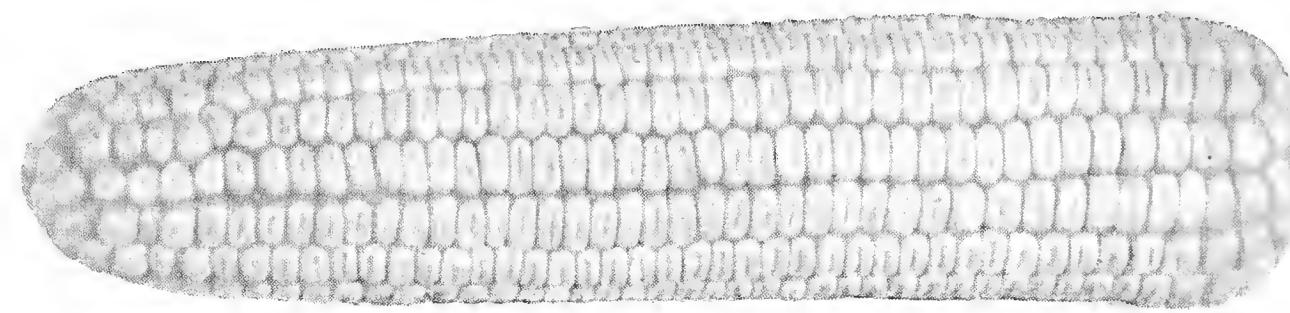
A Field of Kingscrost No. 13 in Northern Wisconsin

CENTRAL AND SOUTHERN MINNESOTA VARIETIES

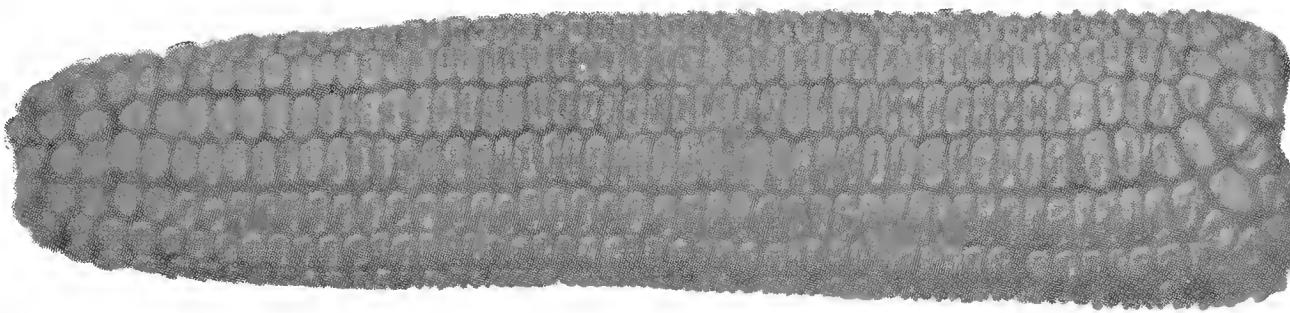
Longfellow Flint

These illustrations are a little less than half the length
of actual ears.

Russler White Dent
Standard



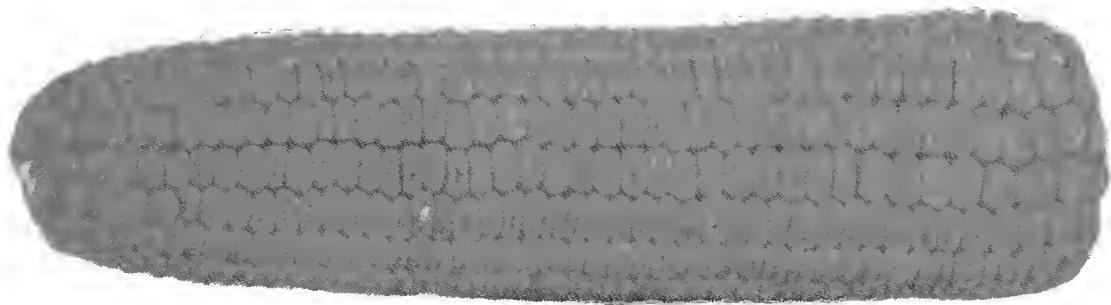
Golden King



Murdock

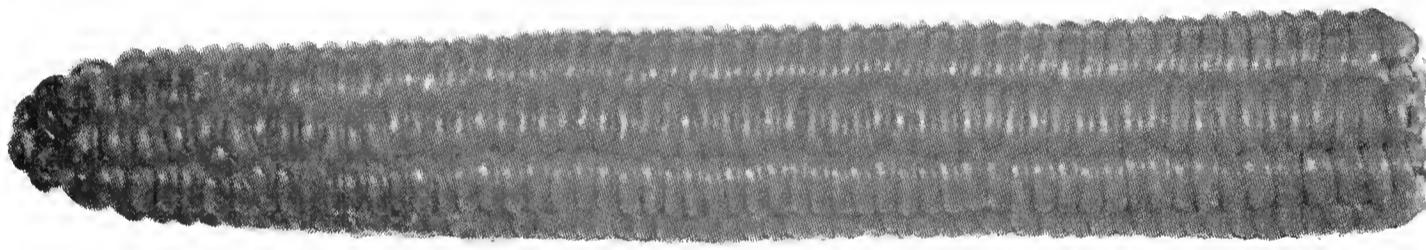


Minnesota No. 13
Standard

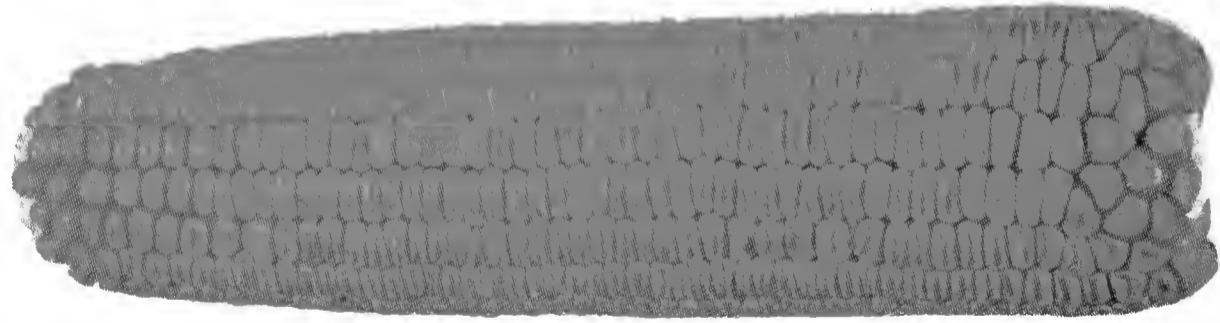


WISCONSIN VARIETIES

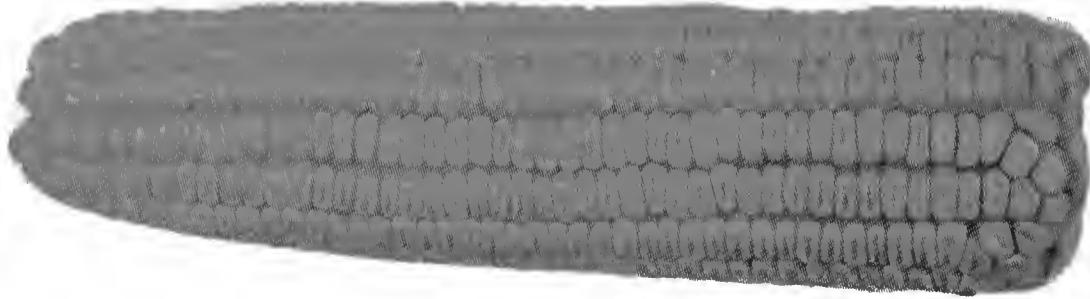
Smut Nose Flint



Wisconsin No. 12
Golden Glow

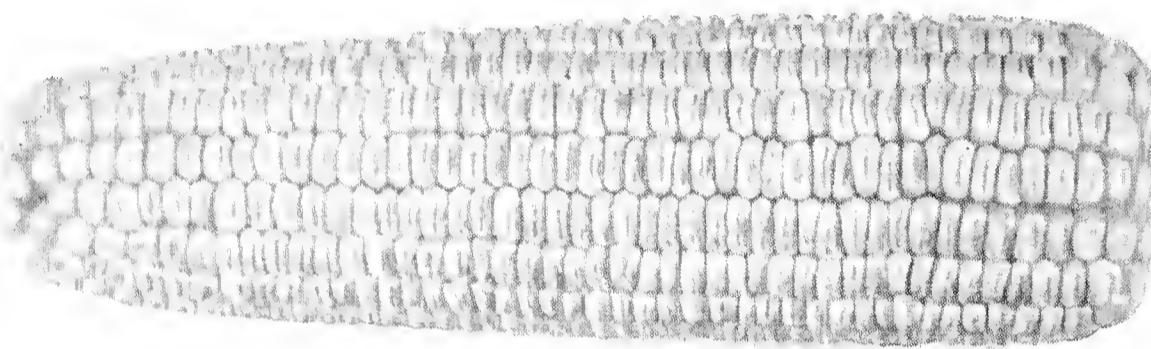


Wisconsin No. 8
Early Yellow Dent

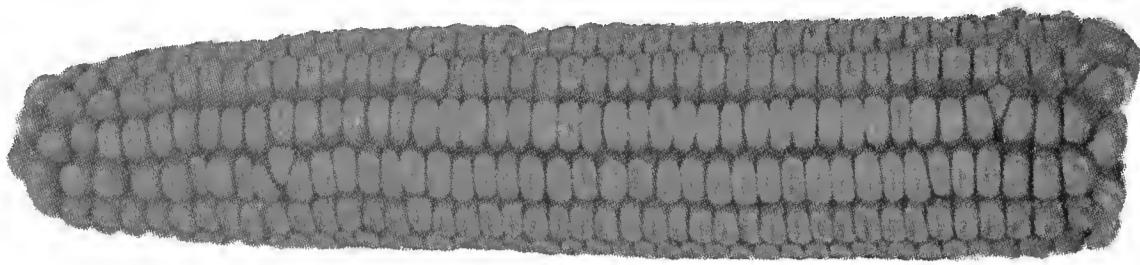


These illustrations are a little less than half the length
of actual ears.

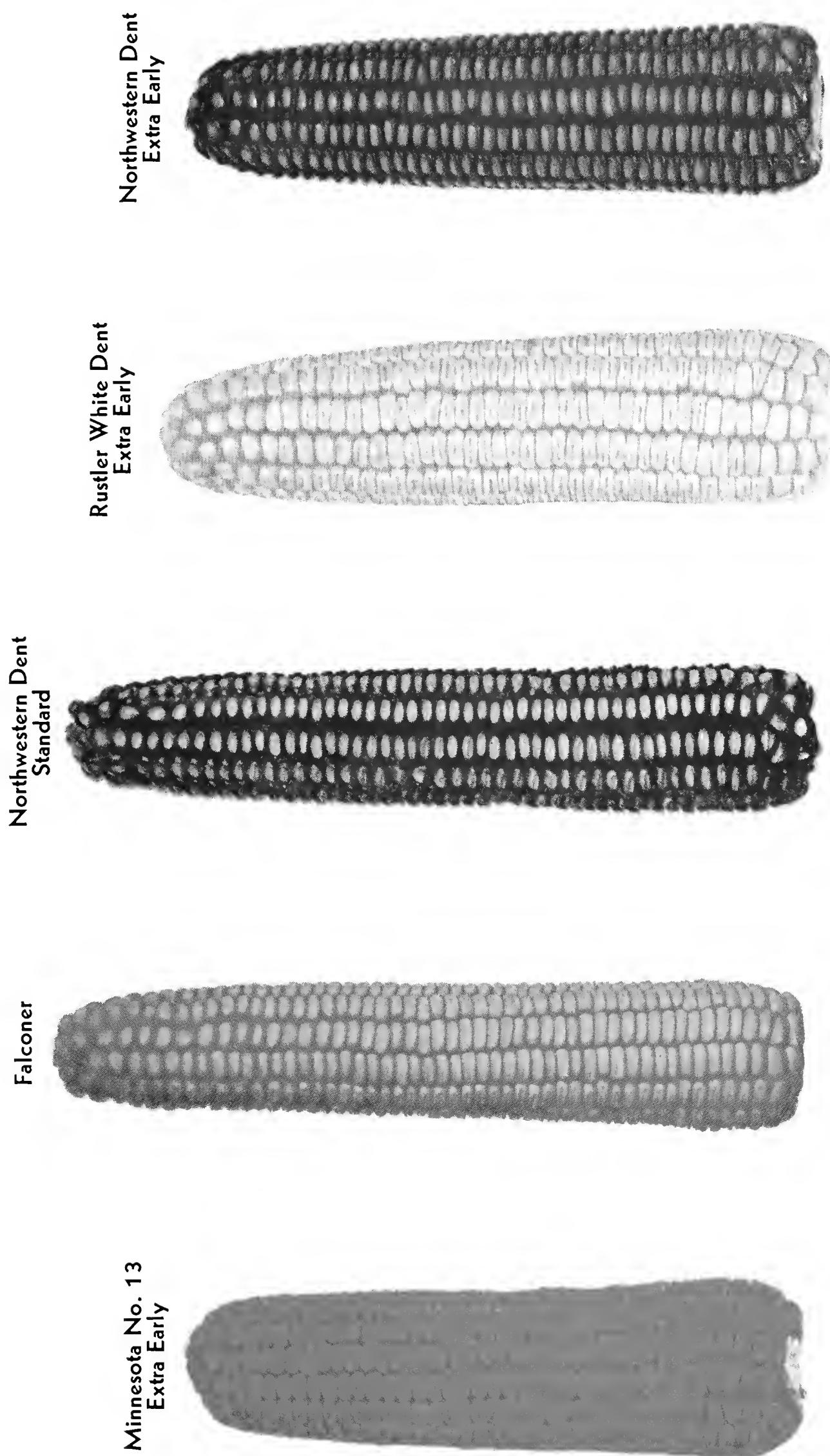
Silver King
Wisconsin No. 7



Wisconsin No. 25



NORTH DAKOTA-NORTHERN MINNESOTA VARIETIES

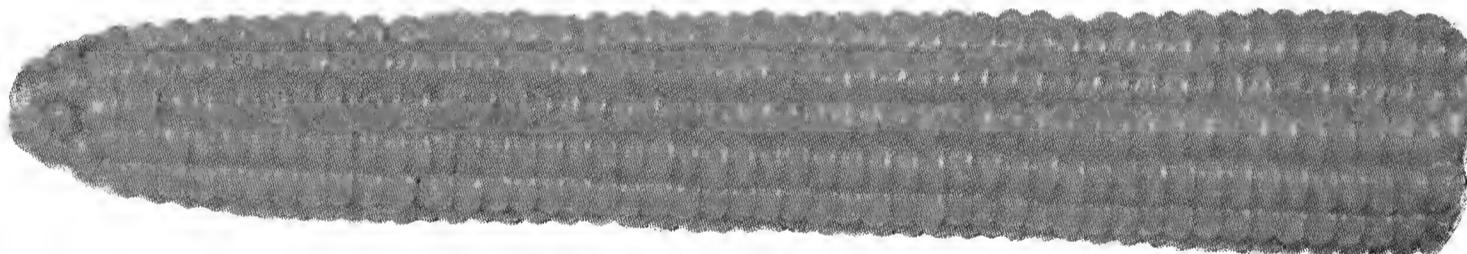


These illustrations are a little less than half the length of actual ears.

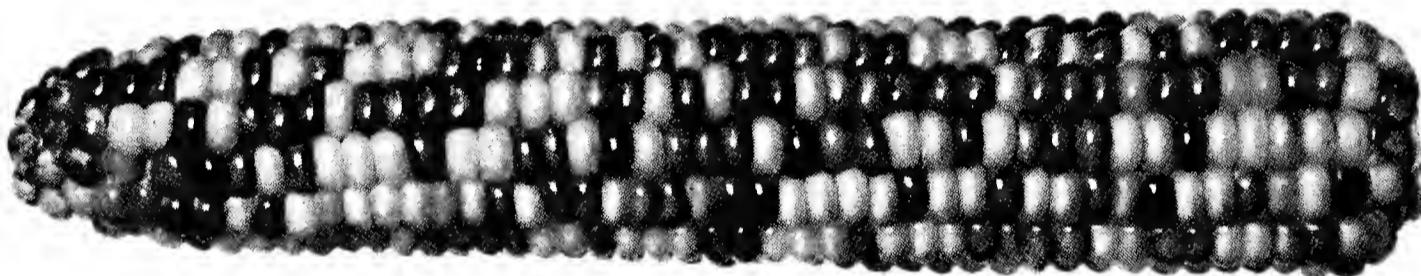
NORTH DAKOTA-NORTHERN MINNESOTA FLINTS

These illustrations are a little less than half the length
of actual ears.

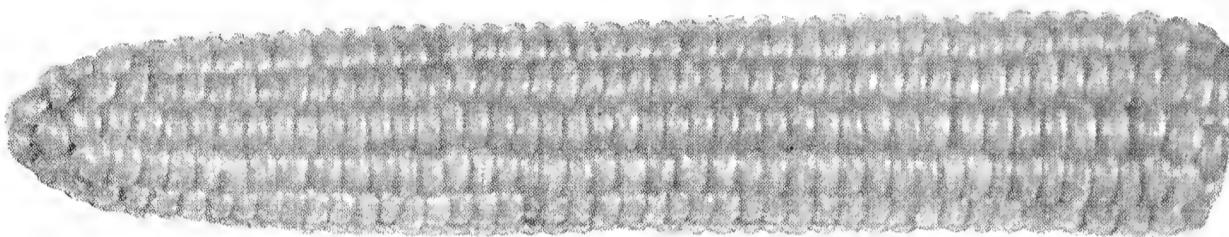
Triumph Flint



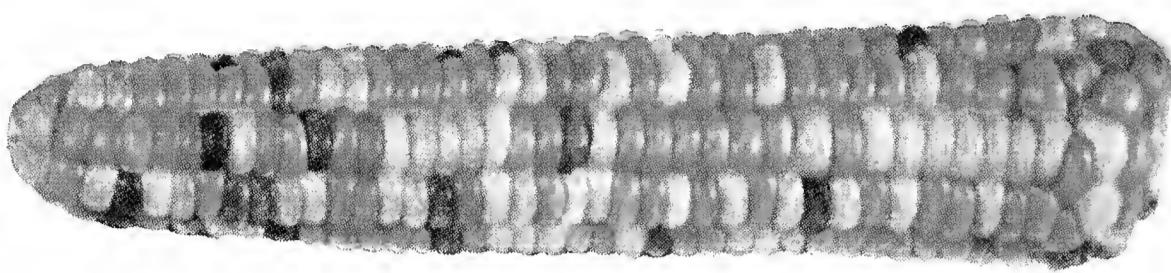
Rainbow Flint



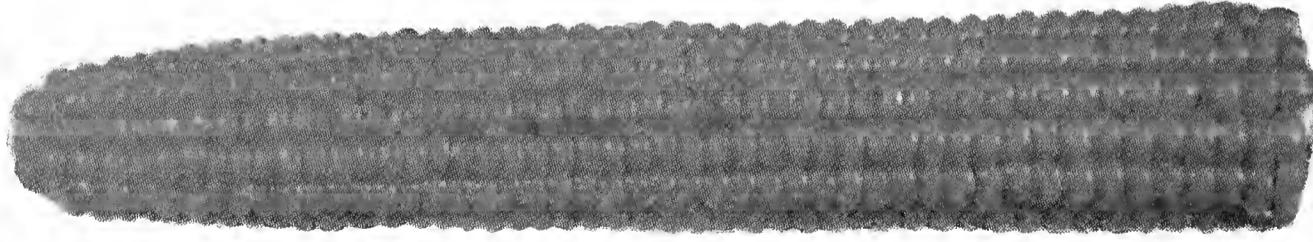
North Dakota White Flint



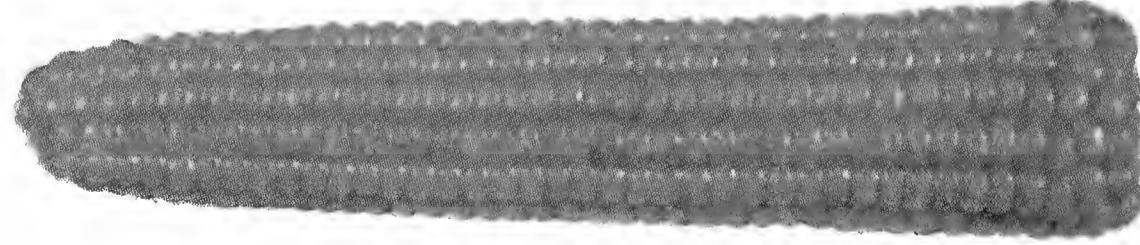
Squaw Flint



Mercer Flint

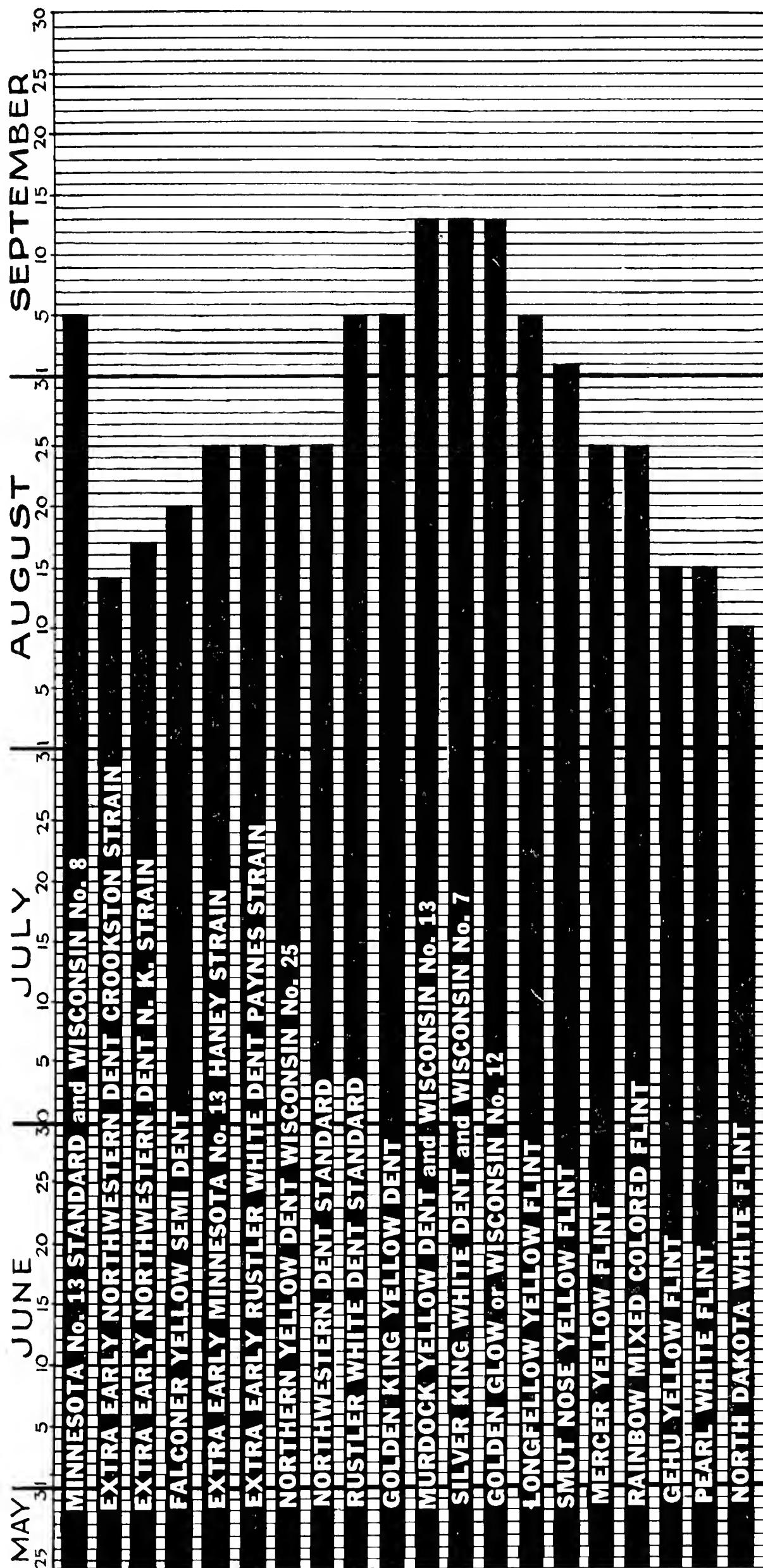


Gehu Flint



APPROXIMATE RIPENING DATES OF STERLING SEED CORN VARIETIES

With average season and average conditions.



Based on conditions at Minneapolis, Minn. planting May 15, coming up May 25. Farther north, the spread between earlier and later varieties would be greater, and farther south, spread would be less.

Varieties of Sterling Seed Corn (Open Pollinated)

100 to 110 Day Group

SILVER KING, WHITE DENT, WISC. NO. 7

105-110 Day

Originated in Iowa, probably in nineties. Adapted to Southern Minnesota and similar areas. Ears are roughly dented with quite parallel sides. Kernels are deep, 14 to 18 rows, and cob is fairly small. Stalk height $\frac{1}{2}$ to 1 foot taller than Minn. No. 13—Wisconsin No. 7 was a selection made by Wisconsin Experiment Station from the Iowa Silver King.

MURDOCK YELLOW DENT

105-110 Day

Murdock originated by a rather prominent Illinois corn man, whose name it carries. It has been a Standard Southern Minnesota variety for many years. There is probably more Murdock grown in Southern Minnesota where it is better adapted than any other variety. Murdock seems to yield better in western Minnesota than the smoother eared varieties. Ears are quite rough with fairly parallel sides. Kernels are quite deep, 14 to 18 rows, with a medium small cob. Stalk height is $\frac{1}{2}$ to 1 foot taller than Minn. No. 13.

GOLDEN KING, YELLOW DENT

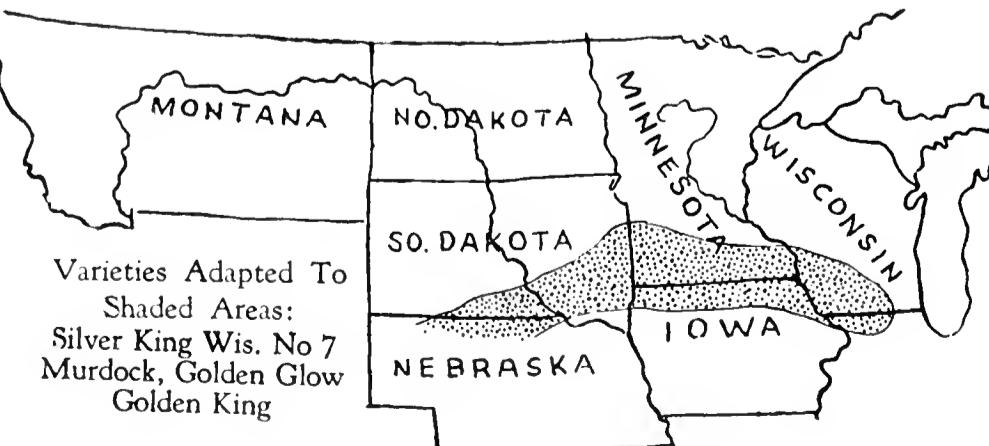
100 Day

Originated by an Iowa farmer from a cross between Minn. No. 13 and Reids Yellow Dent. Carries many of the desirable characters of the Reids with the earliness of Minn. No. 13. Adapted to central and southern Minnesota, northern Iowa and similar areas. Ears carry 14 to 20 rows of quite deep and fairly rough kernels which have a tendency to be narrow. Ears have fairly parallel sides. Stalk height is about the same as Minn. No. 13. This is an outstanding variety for husking. It has the highest average yield in the north section of the Iowa corn yield contest over a 10 year period.

GOLDEN GLOW, WISC. NO. 12, YELLOW DENT

105-110 Day

Developed by the Wisconsin Experiment Station from a cross between Minn. No. 13 and Clark's Yellow Dent. Adapted as a husking corn to



central and southern Wisconsin and southern Minnesota but used as an ensilage variety further north. Ears carry from 14 to 16 rows of rather smooth kernels, and are quite tapering. Slightly larger than Minn. No. 13. Stalk height from $\frac{1}{2}$ to 1 foot taller than Minn. No. 13. Our stock is a Green Bay strain of medium maturity.

95 to 100 Day Group

STANDARD MINN. NO. 13 YELLOW DENT

100 Day

This variety was developed by the Minnesota Experiment Station and introduced in 1897. It is adapted to central Minnesota and Wisconsin and similar sections. Ears are rather smooth, somewhat tapering and carry from 12 to 18 rows of kernels. Stalk height averages 7 to 9 feet under average conditions.

EARLY YELLOW DENT, WISC. NO. 8

100 Day

This is a direct selection from Minn. No. 13 made by the Wisconsin Experiment Station. Maturity is about the same as Minn. No. 13 and adapted to North Central Wisconsin. Ears have a tendency to carry fewer rows than 13. Stalk height is about the same.

RUSTLER WHITE DENT

100 Day

Introduced by Northrup, King & Co. in 1888. Adapted to the same area as Standard Minn. No. 13. Ears are mostly quite smooth, fairly tapering with 12 to 16 rows. Stalk height about the same as Minn. No. 13.

LONGFELLOW FLINT

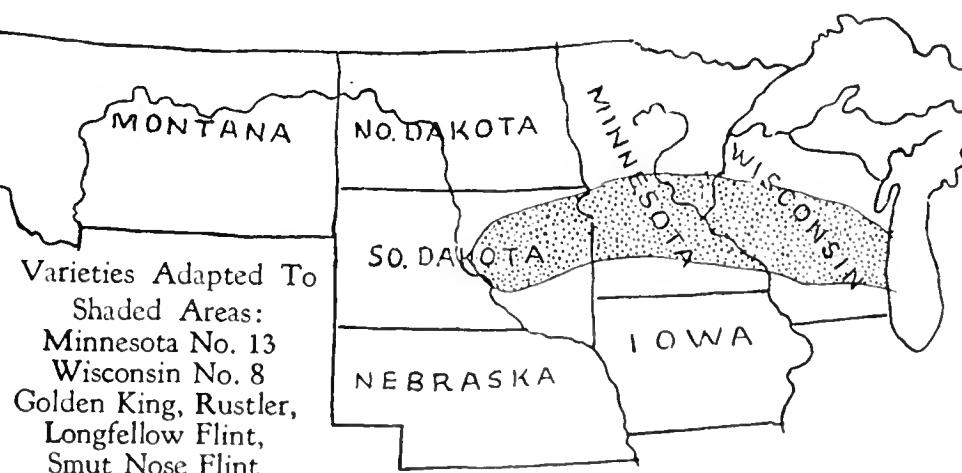
100 Day

An 8 row Yellow Flint with quite long slender ears. An old New England variety. Stalk height somewhat shorter than Standard Minn. No. 13 with the usual flint suckering. Maturity about the same as Minn. No. 13 but it does ripen better in cool seasons than the No. 13.

SMUT NOSE FLINT

95 Day

An 8 row Yellow Flint similar to Longfellow except that it has reddish kernels towards the tip of the ear from which it gets its name. Stalk color also exhibits a reddish cast. Stalk height is about the same as Longfellow, maturity slightly earlier.



Varieties of Sterling Seed Corn

(Open Pollinated, continued)

90 Day Group

STANDARD NORTHWESTERN RED DENT

90 Day

The original stock of this variety came into the Northwest from Indiana in an early day. Northwestern is called a red semi-dent being a cross between a red flint and a yellow dent. It is about 10 days earlier than Minn. No. 13 and adapted to northern Wisconsin and Minnesota and to North Dakota and similar areas. Ears carry 10 to 14 rows and are quite tapering. Kernels are red with a copper yellow cap. They are quite broad and shallow. Stalk height is about $\frac{1}{2}$ to 1 ft. shorter than Minn. No. 13 and suckers are general. Ears are borne quite low. Northwestern seems to have the same characteristics as Flint in being able to make more progress in cool weather than Dents.

EXTRA EARLY MINN. NO. 13 HANEY STRAIN

90 Day

This strain came from an early selection of Standard No. 13 made by Mr. Thorpe of Mayville, North Dakota, beginning immediately after the introduction of Standard Minn. No. 13 in 1897. When J. G. Haney established the International Harvester Co.'s Experiment farm at Grand Forks, North Dakota, he secured this Thorpe Strain and continued selection and breeding. Haney Strain was introduced as such by Northrup, King & Co., in 1921. It is adapted to N. W. Minnesota, North Dakota and similar areas. General ear characters are the same as Standard Minn. No. 13 except smaller. Stalk height is from $\frac{1}{2}$ to 1 ft. shorter. Maturity about 10 days earlier than Standard Minn. No. 13.

EXTRA EARLY RUSTLER, WHITE DENT, PAYNES STRAIN

90 Day

This strain came from Western South Dakota. It is about a week earlier than Standard Rustler. Stalk height is about $\frac{1}{2}$ to 1 ft. shorter than Standard and is adapted to the same areas as Haney Strain Minn. No. 13. Ears carry mostly 12 rows ranging from 10 to 16 rows. Kernels are shallow and wide.

RAINBOW MIXED COLORED FLINT

90 Day

A 10 to 16 row flint with kernels colored all colors of the Rainbow. Matures about the same time as Haney Strain but stalk growth is taller with many long suckers. This variety probably originated in Southern South Dakota, but our Sterling Strain is an earlier strain than the South Dakota Strain and matures quite nicely in North Dakota. Adapted to northern and central Wisconsin, northern and central Minnesota and North Dakota and Montana. This is our most popular flint variety because of its high yield of both grain and fodder. It seems consistently to outyield other flints of the same earliness. Do not confuse this variety with the native North Dakota Squaw Flint which is an extremely dwarf variety also with ears colored like Rainbow.

Sterling Seed Corn—90 Day Group

(Continued)

MERCER YELLOW FLINT

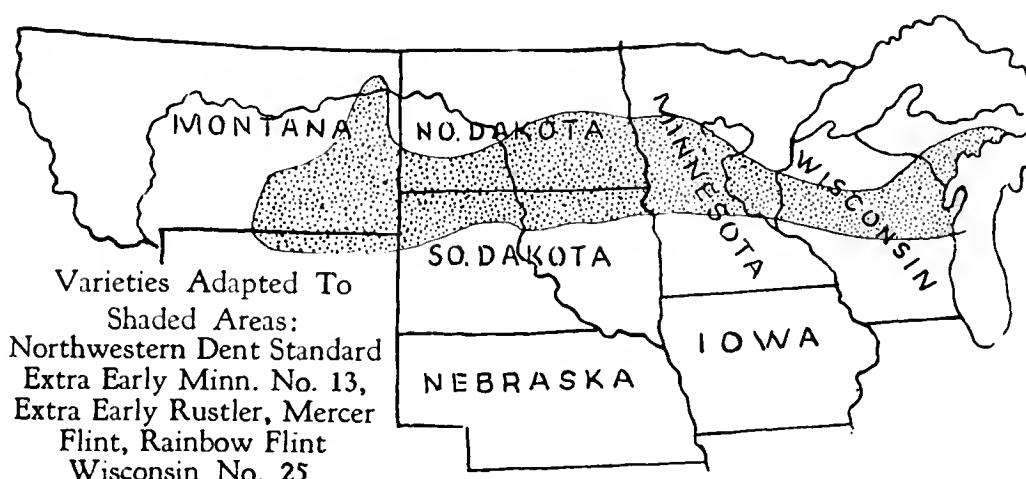
90 Day

This is a very old 10 to 16 row New England Flint. Matures about the same time as Haney Strain, Minn. No. 13. It is one of the largest eared flints. Common with other flints, it suckers profusely. Stalk height about the same as Haney. Adapted to northern and central Wisconsin and Minnesota, and to North Dakota and Montana. It has made the highest average yield of any variety over a long period at the North Dakota Experiment Station.

NORTHERN YELLOW DENT, WISC. NO. 25

90 Day

Originated by Prof. E. J. Delewiche at the Spooner and Sturgeon Bay, Wisconsin branch, Experiment Stations. It is adapted to Northern Wisconsin and similar areas. It is approximately 10 days earlier than Minn. No. 13. Ears average 12 rows of grain and kernels are quite reddish on the sides, rather shallow and broad. Stalk height is about 1 to $\frac{1}{2}$ ft. shorter than Minn. No. 13.



75 to 85 Day Group

EXTRA EARLY N. W. DENT, N. K. STRAIN

85 Day

This is a recombination of several inbred strains, developed by Northrup, King & Co. and introduced in 1928. It matures a few days earlier than Standard N. W. Dent but is practically as large. Ears are similar to Standard N. W. Dent and is adapted to the same area except it can be ripened further North.

EXTRA EARLY N. W. DENT, CROOKSTON STRAIN

80 Day

An early selection made by the Crookston, Minnesota branch, Experiment Station and introduced to the general trade by N. K. & Co. in 1924. Maturity is about a week earlier than Standard N. W. Dent, therefore, adapted somewhat further North. Ears a slight smaller and more ears carry 10 to 12 rows. Stalk height is about $\frac{1}{2}$ to 1 ft. shorter than Standard.

Varieties of Sterling Seed Corn

(Open Pollinated, continued)

75 to 85 Day Group, continued

FALCONER YELLOW SEMI-DENT 85 Day

This variety was originated by Angus Falconer, near Bismarck, North Dakota, from a cross between a Yellow Dent and a Yellow Flint. Ears are quite tapering with 8 to 14 rows but mostly 12. Some ears are quite flinty and some nearly a full dent with other types ranging between. Stalk height is about the same as N. W. Dent with about the same suckering. It is an extremely hardy corn, producing a better yield under unfavorable conditions than any other variety. Adapted to the same areas as N. W. Dent, being about 2 weeks earlier than Minn. No. 13.

GEHU YELLOW FLINT 80 Day

A dwarf early 10 to 16 row variety considered to be from a cross between the native North Dakota 8 Row White Flint and Mercer Flint. It matures slightly earlier than the Crookston Strain, N. W. Dent, suckers generally; ears are borne quite low, but good size. Gehu is adapted to N. W. Minnesota and northern North Dakota, and Montana and Canada. It does much better than dents in cool seasons in this area.

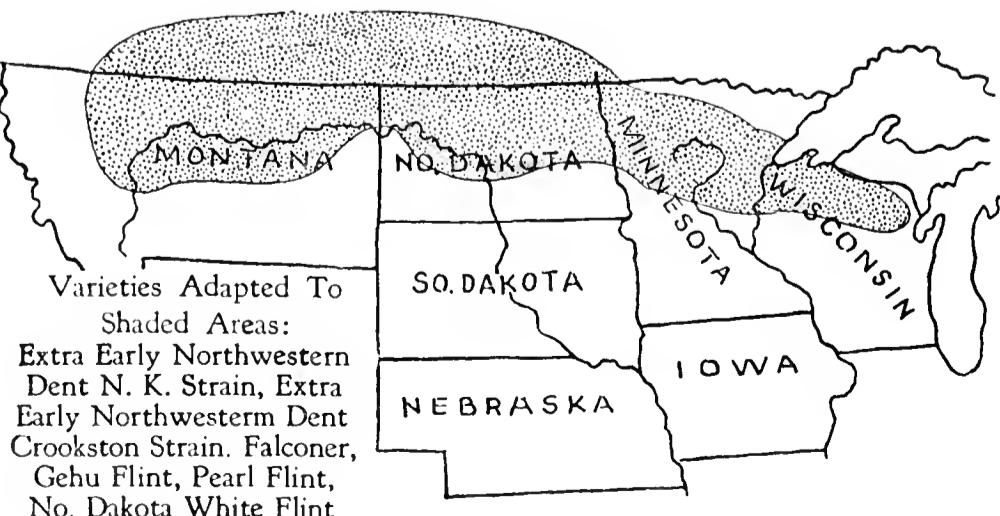
PEARL WHITE FLINT 80 Day

This is a white 8 to 14 row Flint considered to have been handed down by the Indian tribes living in the vicinity of Red Lake, Minnesota. It matures about the same time as Gehu, grows slightly taller, but still classes as a dwarf Flint. Ears are quite large which a little higher on the stalk than Gehu.

NORTH DAKOTA WHITE FLINT

75 Day

Very similar to Pearl Flint except not quite so large in plant and ear, with a little earlier maturity. There are also a higher percentage of 8 and 10 row ears than in Pearl.



Production of Sterling Seed Corn (Open Pollinated)

If you buy a variety of Sterling seed corn one year and find it has the proper earliness and shows a good yield, you want to be sure you will get the same strain of corn the next year you buy the same variety of Sterling seed corn.

The only way we can assure you of this is to grow all our seed corn especially for seed from our own foundation stocks and under our own supervision. This is obvious. Yet Northrup, King & Co. is one of a very few seedsmen who do this.

Strains of the varieties we are now growing are those which have been selected after years of superior performance in our trial grounds and on customers' farms. Between 1920 and 1925, we investigated the possibility of growing seed of the native North Dakota strains in central Minnesota in such a manner as to maintain the earliness of the original seed.

Both the North Dakota and Crookston Experiment Stations cooperated with us in comparing seed of their own strain grown in Wright County by us for one or two years with that grown continually in their section. They found with our careful production methods we were able to maintain the original earliness and our seed produced a little higher yield. In order to guard against mixtures with later maturing central Minnesota strains, we secure new seed, from North Dakota and Northwest Minnesota, of these extra early strains every few years.

The same principles are followed with production of Wisconsin varieties for seed in Minnesota. We have selected foundation strains which are maintained in Wisconsin. We secure new seed from these sources from which to grow our seed crops of these varieties in Minnesota.

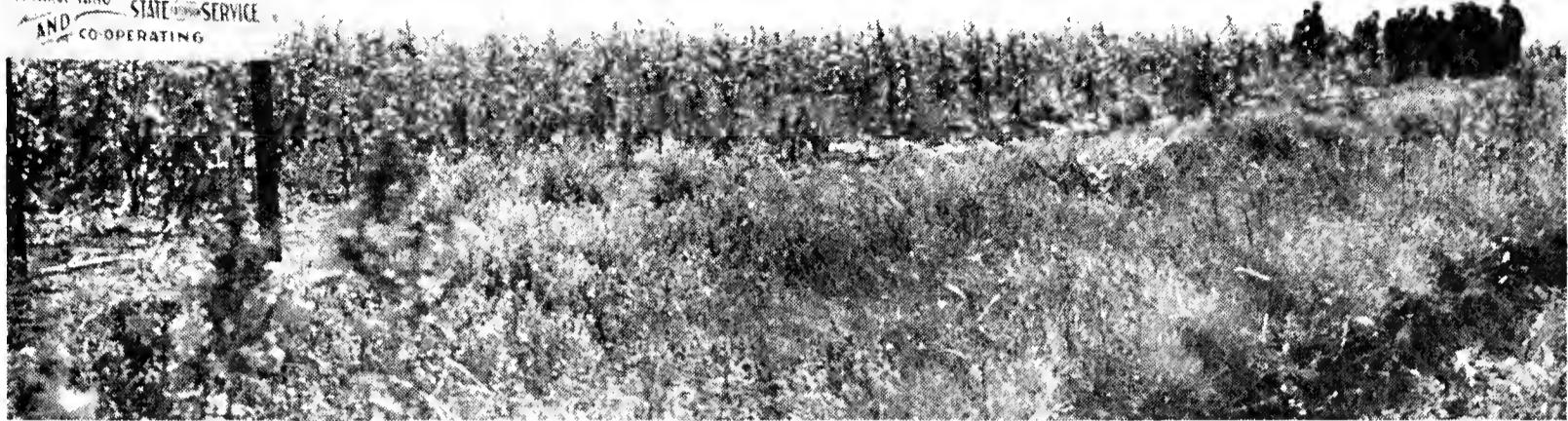
By so doing, we have been able to maintain in our stocks the factors of acclimatization to Wisconsin conditions while producing seed in the more favorable seed producing area of eastern Minnesota.



Extra Early Northwestern Dent, Crookston Strain, growing at the Crookston Experiment Station.

NORTHRUP, KING & CO'S DEPENDABLE STERLING SEED CORN

AGRICULTURAL DEPT.
CORN VARIETY TEST.
NORTHRUP, KING & CO.
AND STATE SERVICE
CO-OPERATING



One of the corn variety tests conducted jointly by Northrup, King & Co. and the Agricultural Department of the Soo Line Ry. in North Dakota.

The area in which we produce our Sterling Seed Corn is all within a 60 mile radius of Minneapolis, where we can give it careful attention and early drying.

Fifty years experience has proven this area to be the most dependable for seed production as well as for growing a high quality of grain.

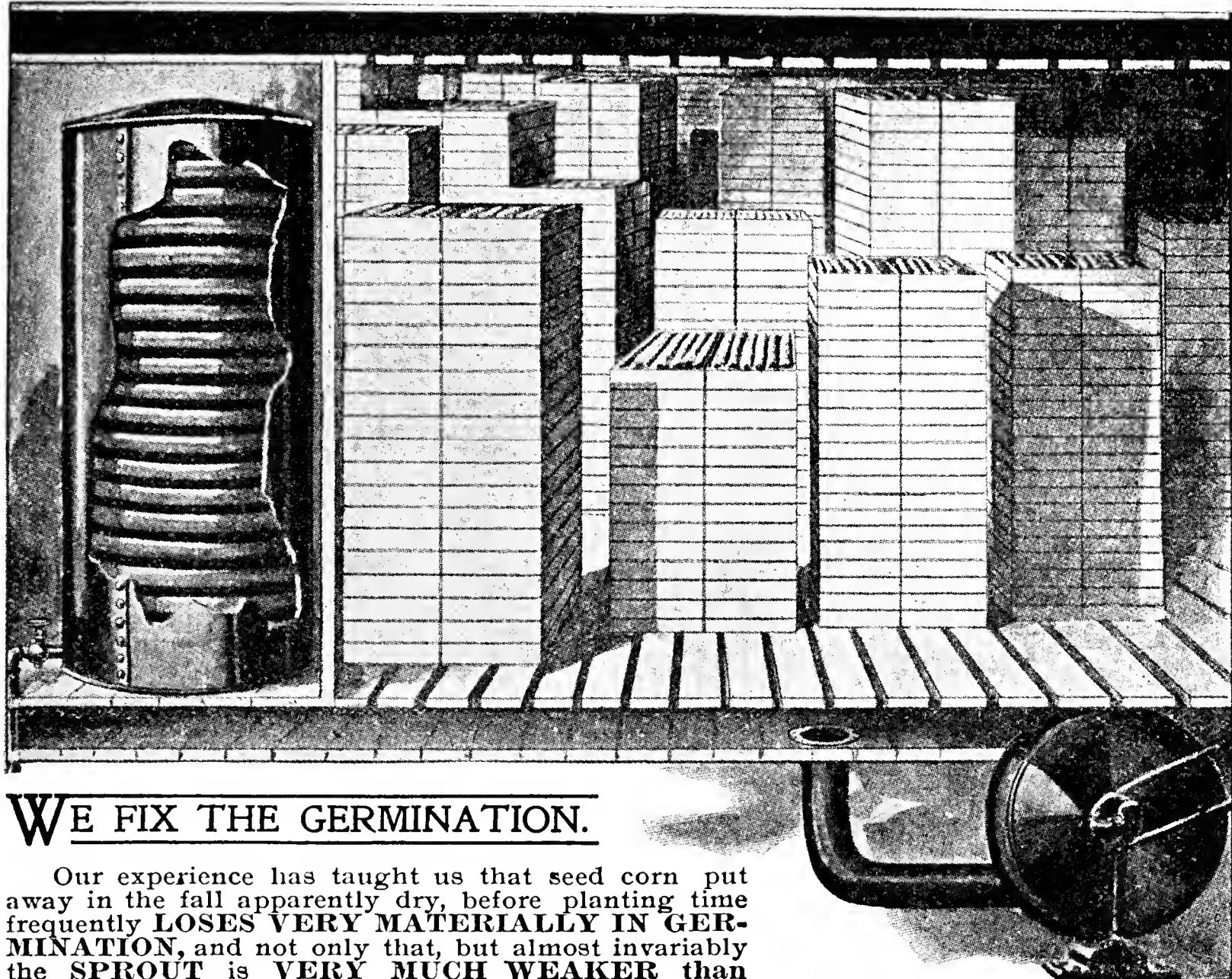


Standard Minnesota No. 13 grown for ensilage in eastern Wisconsin.

WE FIRE-DRIED SEED CORN BACK IN 1901

The illustration below is a reduced illustration of page 14 from our 1901 general catalog. Note that we were "fire drying" our seed corn at that time—as we do now, with much improved equipment.

FIRE DRIED SEED CORN.



WE FIX THE GERMINATION.

Our experience has taught us that seed corn put away in the fall apparently dry, before planting time frequently **LOSES VERY MATERIALLY IN GERMINATION**, and not only that, but almost invariably the **SPROUT** is **VERY MUCH WEAKER** than when first tested.

Any seed when not *thoroughly dry* is very sensitive to atmospheric changes. Corn is more than ordinarily so, as the natural process of drying out is very slow. Cold weather usually comes on before it is completely dried; the cob retains more or less moisture throughout the winter and spring; and the result can be nothing but **impaired germination and greatly lessened vitality of the seed.**

For several years past this phase of the seed corn question has been a matter of serious consideration and study with us, and has resulted in the building by us this year of a kiln especially constructed for drying corn on the ear. This kiln has a capacity of **three thousand bushels of ear corn every forty-eight hours.** It is built from our own plans, and is, we believe, the **only dry kiln operated by any seed firm in the United States.** Corn taken from it comes out **BONE DRY** and its germination "STAYS." Seed corn apparently dry loses from 5 to 10% of its weight when put through this kiln. This tells the story. **It will cost you 10 to 25 cents an acre more to plant our kiln dry seed than ordinary crib corn. Isn't it worth the difference?**

RECOGNITION.

We can consistently claim to be headquarters on **SEED CORN**. The fact that every variety that is standard in the Northwest to-day is of our introduction, speaks more strongly than anything we can say as to the satisfaction our seed has given. The following clipping from the editorial columns of the Feb. 15th, 1899, issue of *The Farmer* (St. Paul) shows that the work we have accomplished along these lines is recognized by those in a position to know the facts:

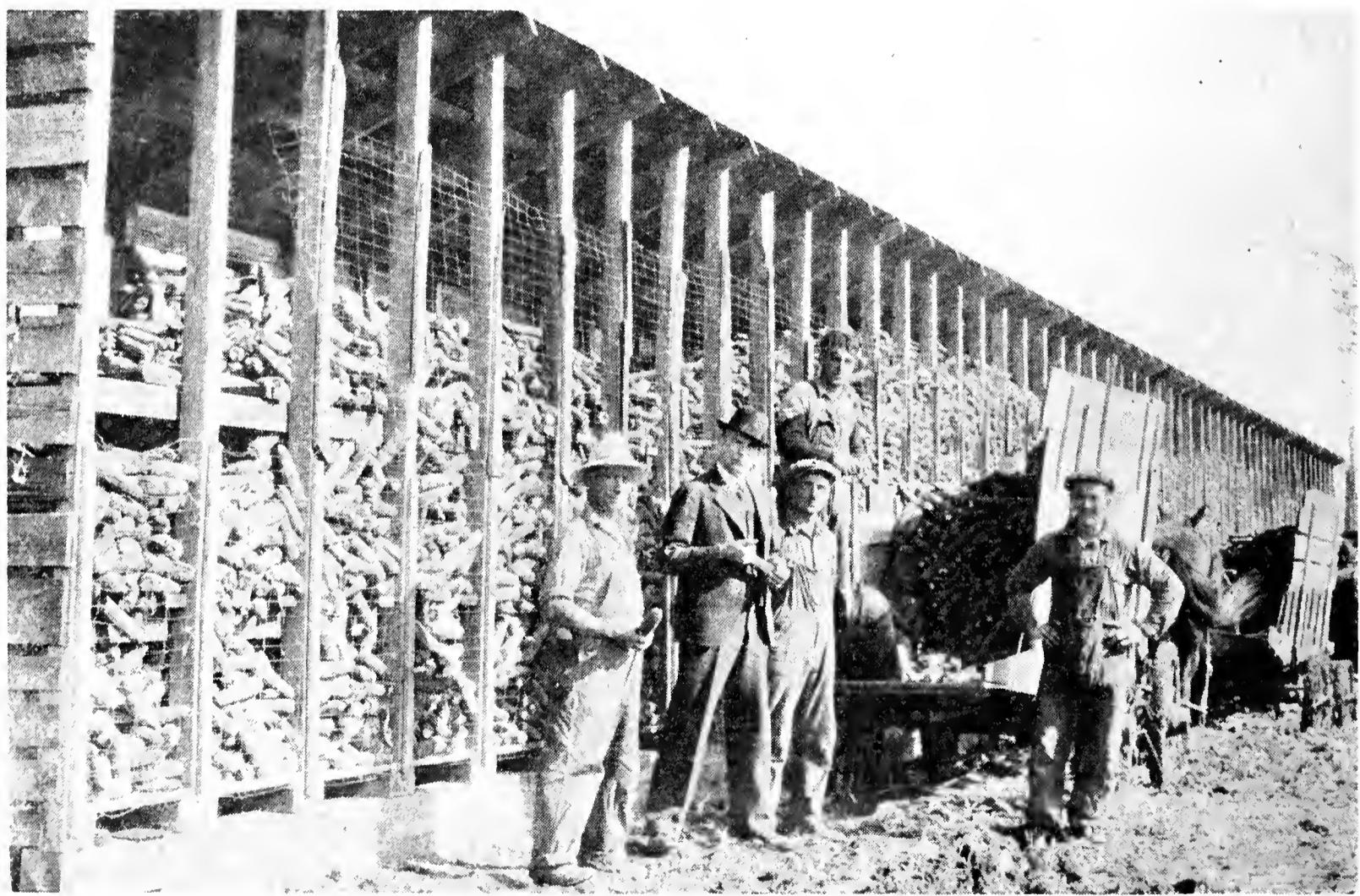
"The farmers of Minnesota owe Northrup, King & Co. a debt that will not soon be paid. Long before Professor Hays began his remarkable experiments with corn, this firm was spending money and time in two directions, to develop varieties of corn that would produce well here, and to convince farmers that it would pay to plant corn. Last year the crop of corn in Minnesota was 50,000,000 bushels, and the State is getting into the corn belt. To Mr. Northrup's faith in corn and his persistence in pushing varieties like Minnesota King, is due, to a large degree, the increased acreage of this important grain and forage crop."

We cannot pit OUR SELECTED and TESTED MINNE-SOTA GROWN SEED CORN against "Crib" Corn, or cheap seed, but we do challenge comparison of RESULTS with SEED FROM ANY SOURCE. ☺ ☺ ☺ ☺ ☺

Curing of Sterling Seed Corn

Proper curing of seed corn results in a high percentage of germination and a high vigor of germination. Early and quick drying prevents development of certain mold organisms on the seed. These organisms cause seedling blight, root rots and ear molds in the crop—and often kill live germs during the sprouting period, causing thin or weak stands. Proper seed corn curing requires long experience and adequate equipment. We have been fire-drying our Sterling seed corn over 50 years. Our first driers pictured in our old catalogs appear crude today, but each one was a step in experience. Now, our equipment, costing over a quarter of a million dollars, will handle considerably over 100,000 bushels of seed corn before dangerous freezing weather.

Hastening of drying starts with storage cribs. These are especially constructed to allow cross ventilation and no ear is over a foot away from an air space. From these cribs, the seed is rushed to one of our three drying plants.

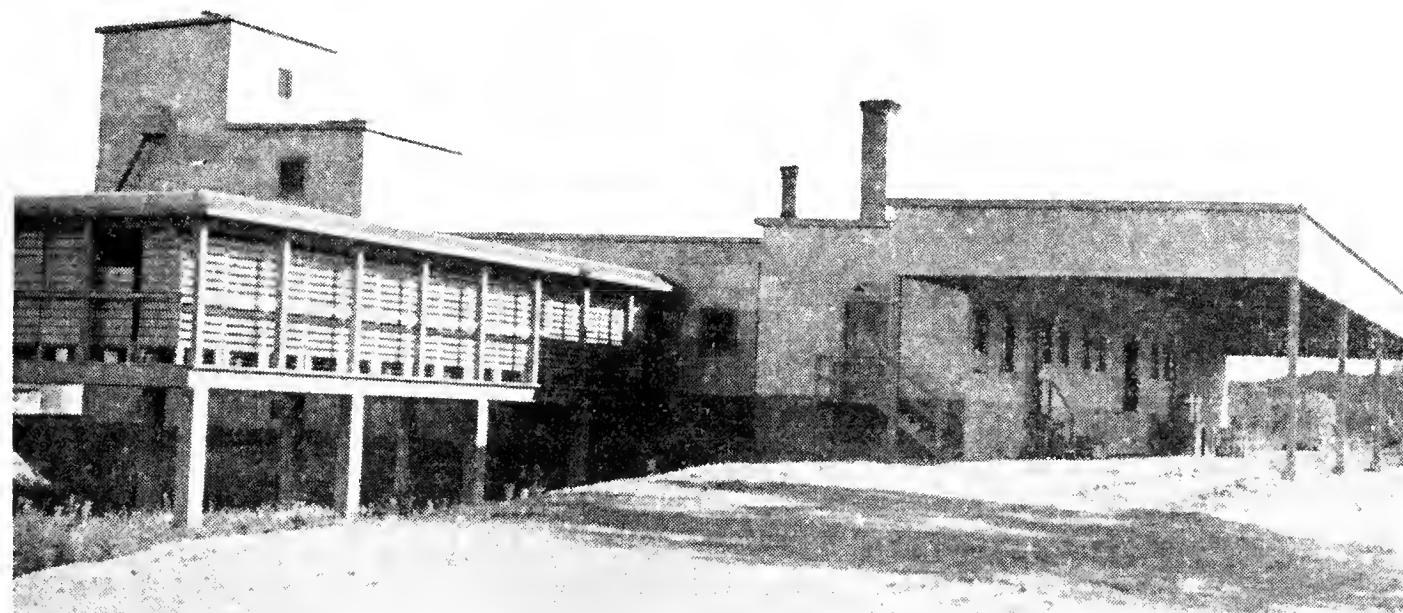


This is the type of crib used for preliminary curing and storage before Kingscroft and Sterling Seed Corn is sent to one of our three drying plants. The cribs are built according to plans authorized by Northrup, King & Co.

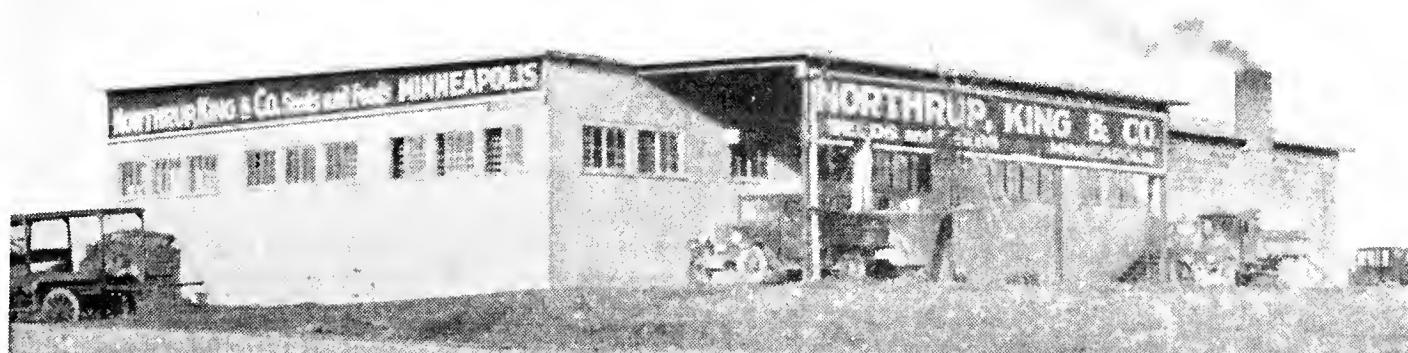
One of our drying plants is included in the group of buildings which constitute our main plant at Minneapolis. Another is located in Le Sueur County, 60 miles south of Minneapolis and the third in Wright County, 50 miles west of Minneapolis, near the border of Wright and Meeker County.

In these plants, the moisture of the corn is promptly reduced to 12%. This process requires only one to three days, after which the corn is shelled. All plants start operating early in September and all the seed is usually dried and out of danger before November 1. Grading is done during the winter months.

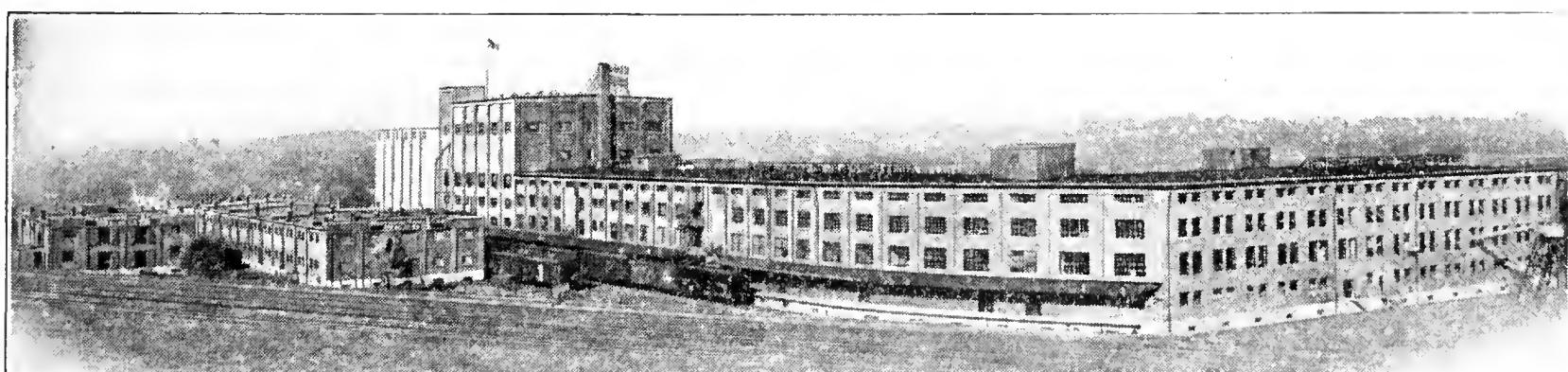
Sterling seed corn is three times hand sorted, once while husking, again when received at the Plant and again after drying and before shelling.



Northrup, King & Co.'s No. 3 Drying Plant in South Central Minnesota, 60 miles from Minneapolis. Capacity 2000 bushels daily.



Northrup, King & Co.'s No. 2 Drying Plant in West Central Minnesota, 50 miles from Minneapolis. Capacity 700 bushels daily.



Main plant of Northrup, King & Co., at Minneapolis. Second building from left is the seed corn drying plant. Capacity 1200 bushels daily. Grading, testing, sacking, storage in main building at right.

Sterling Silo Corn

In the grading of our Sterling Seed Corn, we separate round kernels from the flat. These round kernels are blended with flat seed in a little larger proportion than the crop runs to make up our Sterling Silo Corn.

This grade of seed corn has proven quite popular where thicker planting for ensilage is practiced and even drops of 3 kernels per hill are not necessary. Sterling Silo Corn sells at a lower price than Sterling Seed Corn and has proven much more satisfactory than Fodder corn for ensilage. The main reason is the higher percentage of dry matter in ensilage made from Sterling Silo compared to the later maturing more southern grown Fodder corn. Dry matter in ensilage, of course, is its feed content.

Later maturing corn appears to be giving high ensilage yields only because of the higher percentage of water. Water, of course, can be produced more economically from the well than in the field.

STERLING SILO CORN VARIETIES

Minn. No. 13 Silo Corn

Extra Early Minn. No. 13 Silo Corn

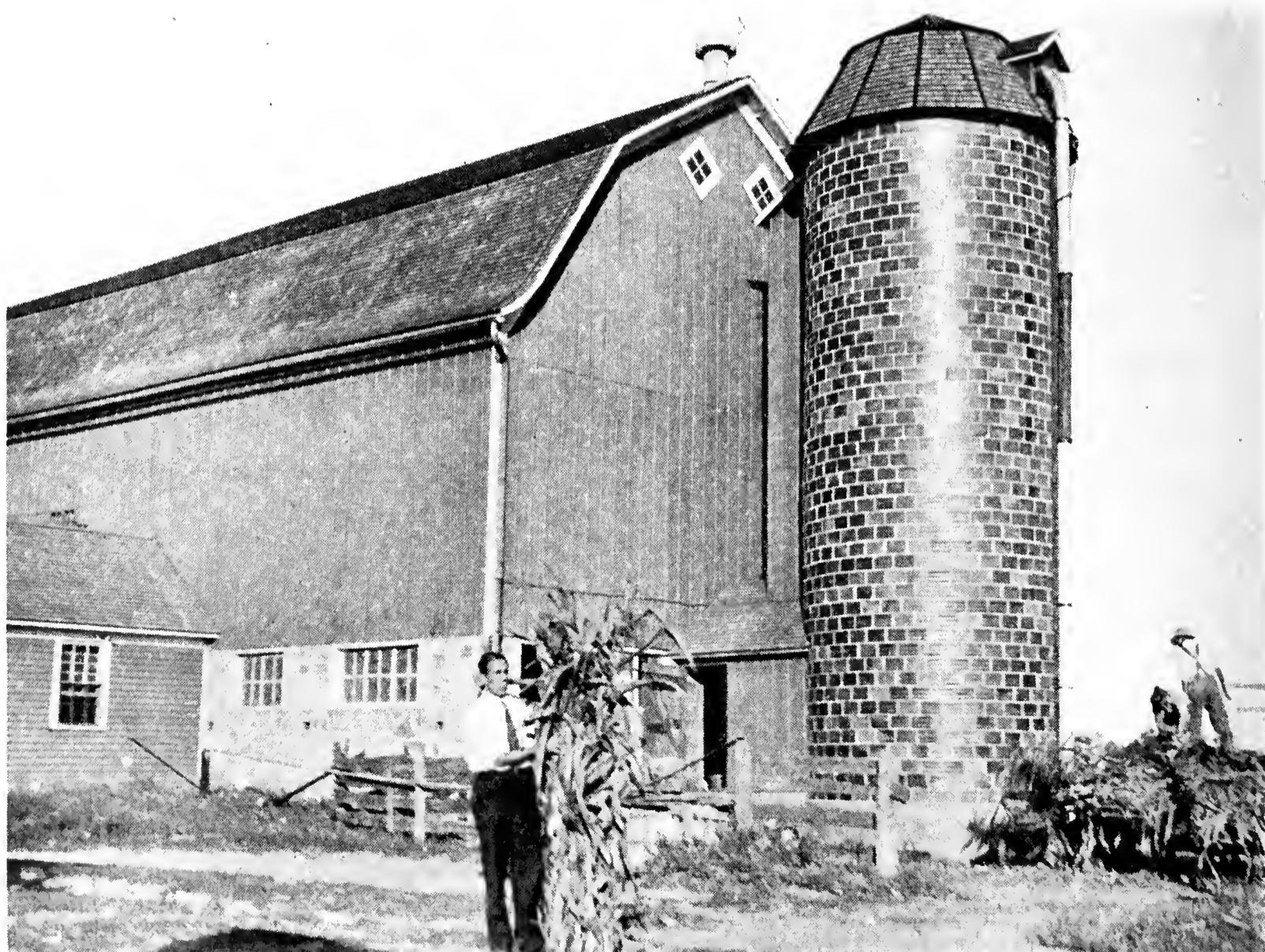
Golden Glow, Wisc. No. 12 Silo Corn

Ideal Silo Corn

N. W. Dent Silo Corn

Rustler White Dent Silo Corn

Silver King, White Dent Silo Corn



**Northrup, King & Co.'s Sterling Seed Corn
is Sold Only Through Dealers . . . and is
Packed in 2½ bu. Bags like this:**



Varieties of Sterling Seed Corn now available. Descriptions on pages 18-19-20-21-22 of this Bulletin.

SILVER KING, WHITE DENT,
WISCONSIN NO. 7
MURDOCK YELLOW DENT
GOLDEN KING, YELLOW DENT
GOLDEN GLOW, WISCONSIN
NO. 12 YELLOW DENT
STANDARD MINNESOTA NO. 13,
YELLOW DENT
EARLY YELLOW DENT,
WISCONSIN NO. 8
RUSTLER WHITE DENT
LONGFELLOW FLINT
SMUT NOSE FLINT
STANDARD NORTHWESTERN
RED DENT

EXTRA EARLY MINNESOTA
NO. 13 HANEY STRAIN
EXTRA EARLY RUSTLER,
WHITE DENT, PAYNES STRAIN
RAINBOW MIXED COLORED FLINT
MERCER YELLOW FLINT
NORTHERN YELLOW DENT,
WISCONSIN NO. 25
EXTRA EARLY NORTHWESTERN
DENT, N. K. & CO. STRAIN
FALCONER SEMI DENT
GEHU YELLOW FLINT
PEARL WHITE FLINT
NORTH DAKOTA WHITE FLINT

STERLING AND KINGSCROST

Seed Corn Bulletin



Northrup, King & Co.

Seed Growers and Merchants Since 1884

Minneapolis, Minn.